Requests for Ocean Construction Equipment Inventory (OCEI)

To inquire about equipment availability, contact Jamie Kelly or Chris Jarrins at the OCEI (757) 485-6403 , DSN: 961-6403, Fax: (757) 396-0479, or E-mail: ocsfstj@pilot.infi.net. The OCEI contains over 100 major items or systems of loanable specialized equipment and facilities components used primarily by the Underwater Construction Teams (UCTs) of the Naval Construction Force (NCF) to perform construction, inspection, maintenance, repair and removal of fleet and other Navy fixed underwater and ocean facilities.

The Ocean Construction Support Facility, manages and maintains the OCEI and is located at St. Juliens Creek Annex Building 252, Portsmouth, VA 23702. This equipment is available for loan on a cost recovery basis to other Navy and Department of Defense (DOD) activities, and their contractors.

AIR COMPRESSOR 375 CFM

Manufacturer: Sullair Corp.

Model: 375DTQ 2WJD **CATALOG** 1

Application:

Provides a source of pulse free low pressure air to power air operated tools and equipment.

General Description:

Trailer mounted with a pintle type draw bar. The compressor is a single stage rotary screw driven by a four cylinder diesel engine.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person required for operating and maintaining the equipment.
TRAINING: A basic mechanical/machinery operator background in equipment operation and maintenance is required.

FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and /or operator's manual.

Specifications:

Delivers up to 375 cfm at 100 psi.

L147 X W 90 XH64 inches.
Weight 5,100 lbs.

AIR TUGGER 4 K

Manufacturer:

Model: KU4 & HU-40 CATALOG 2

Application:

The winch is portable, and lends itself to a wide variety of hoisting, pulling and tugging operations.

General Description:

The air powered winch system consists of a radial piston driven reversible motor and cable drum assembly. The unit is designed to operate at 90 psi. The winch is controlled by a self closing throttle and a band type brake. The tension and drum speed of the winch are controlled by the volume and pressure of the compressed air supply.

General Requirements:

SUPPORT: Requires an air compressor capable of 300 cfm and 90 psi.

OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A knowledge of mechanical equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

K4U
Line Pull 4000 lbs.
Line Speed 125 fpm
Wire Rope Size 7/16 inch Drum Size
Flange to Flange 10 inches
Drum Diameter 19 inches
Drum Core 8 inches
L39 XW21 XH29 inches
Weight: 850 lbs.
HU-40
Line Pull 4000 lbs.
Line Speed 70 fpm
Wire Rope Size 3/8 inch
Drum Size
Flange to Flange 7 1/8 inches
Drum Diameter 16 inches
Drum Core 7 inches
L33 XW18 XH24 inches
Weight: 525 lbs.

AIR COMPRESSOR 375 cfm

OCEI Catalog # 1 Manufacturer: Sullair Corp.

Model: 375DTQ 2WJD

Delivers up to 375 cfm at 100 psi.

AIR TUGGER 7 K

Manufacturer: Beebe Bros. Inc.

Model: 7000 P80-36 **CATALOG** 3

Application:

The winch is portable, and lends itself to a wide variety of hoisting, pulling and tugging operations.

General Description:

The air operated winch consists of a radial, piston-type, air operated motor and cable drum assembly which is designed to operate with 90 psi air supply. The winch is controlled by an air valve allowing it to be stopped, started, and reversed at any time without removing the load. The volume and pressure of the supply air will determine the units efficiency. The air winch is capable of controlled line tension at a rated line pull of 7000 pounds and a line speed of up to 80 fpm.

General Requirements:

SUPPORT: Requires compressed air at 300 cfm and 90 psi.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

CABLE DRUM CAPACITY:
Line Pull 7000 pounds up to 50 fpm

Line Diameter	Length
5/8 inch.	1,500 feet.
3/4 inch.	1,150 feet.
7/8 inch	850 feet.

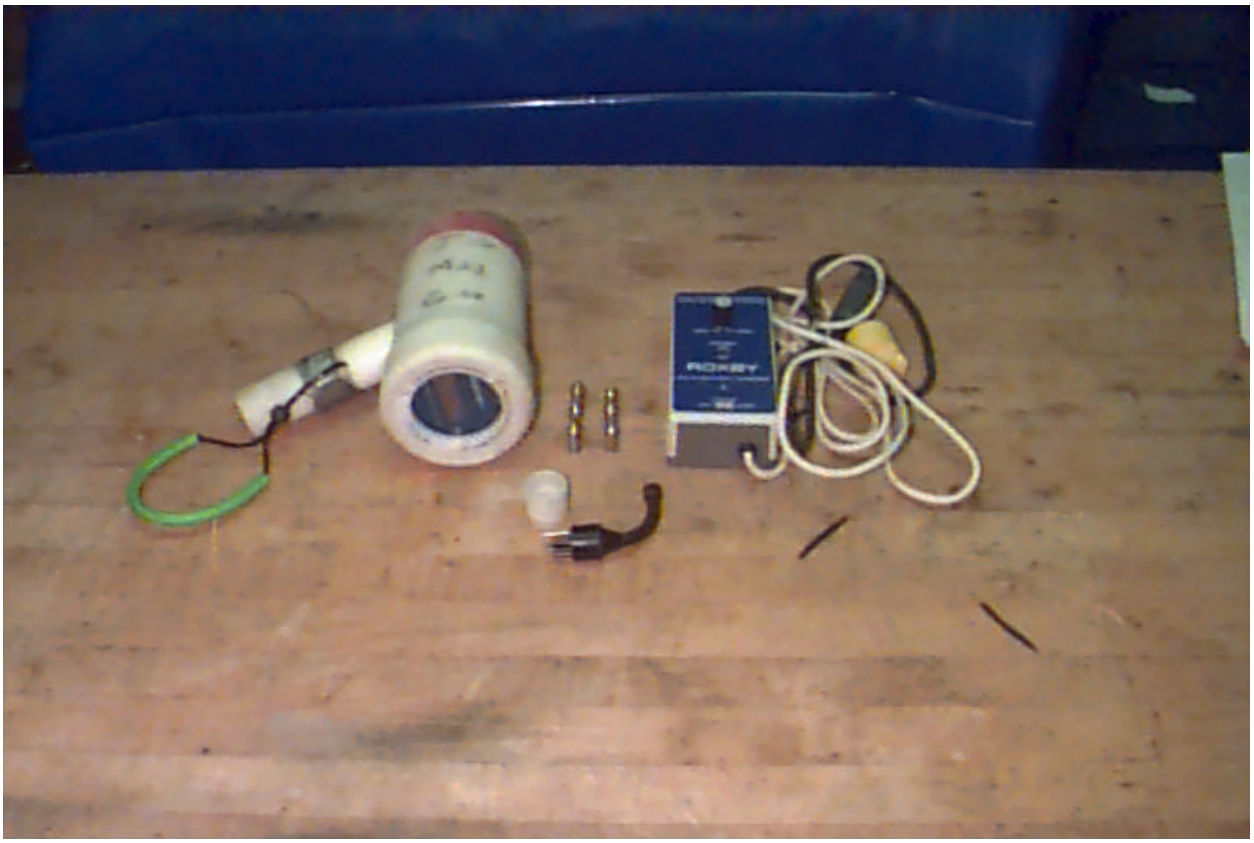
L80 XW35 XH36 inches.
Weight: 2,236 lbs.

AIR COMPRESSOR 375 cfm

OCEI Catalog # 1 Manufacturer: Sullair Corp.

Model: 375DTQ 2WJD

Delivers up to 375 cfm at 100 psi.



BATHYCORROMETER

Manufacturer: Roxby Engineering International

Model: Mark V **CATALOG** 4

Application:

The unit is designed for diver use and is suitable for operation on steel either in a cleaned condition or with a thin coating of paint, insulating tape, etc., such as steel pilings or undersea pipes with thin plastic wrappings. The rechargeable battery is capable of providing 60 hours of use under normal conditions.

General Description:

The bathycorrometer was designed to provide a measure of effectiveness of cathodic protection systems on various structures. It consists of a silver/silver chloride reference electrode, a self cell, a digital voltmeter and a probe. The unit operates by measuring the potential between the reference electrode and the material being measured and then displaying the reading on the liquid crystal display. The unit is supplied with a battery charger. It can be used with a surface display monitor (OCEI number 1262) and a 50-foot cable to allow the measurements to be monitored by

personnel topside in addition to the diver operating the system.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One diver is required to operate and monitor the system underwater.
TRAINING: A thorough knowledge of electrical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Surface display monitor is powered using 110 AC voltage which also recharges the battery in the probe. Monitor must be powered with proper GFI-protected equipment.
L10 XW5 XH9 inches
Weight: 15 lbs.

Surface Display Unit

OCEI Catalog # 1262 Manufacturer:

Model:

BATHYMETRIC SURVEY SYSTEM

Manufacturer: Specialty Devices Inc. (SDI), Plano Texas

Model: **CATALOG** 6

Application:

The Bathymetric Survey System (BSS) is designed primarily for mapping nearshore bathymetry using a single beam fathometer integrated with a data acquisition and navigation system which can provide GPS or DGPS navigational accuracy. It can also be used on land as a navigation or rough positioning system.

General Description:

The complete, DGPS-capable, BSS is made up of two functionally identical units, or subsystems, each containing a GPS navigation system, depth sounder, computer, a radio modem, splash proof keyboard, and flat screen monitor. The second unit can be set up on shore as a DGPS base station to provide 2-3 meter position accuracy. Either unit can function stand alone in a small boat as a bathymetric survey system providing GPS navigational accuracy (~20 meters). When combined with a Precision Lightweight GPS Receiver (PLGR), the unit provides GPS plus Y code accuracy (~8

meters). The units are equipped with two each rechargeable NiMH battery packs, each providing up to one hour of system operation. A 12V DC power supply is required for normal operation. The power supply may be from an automotive-type lead acid battery. A Gel Cell battery is recommended.

General Requirements:

SUPPORT: One 12 vdc (automotive or Gel Cell) battery to power the base station unit, and two similar batteries for the at-sea unit are required to provide up to 12 hours of operation. Otherwise, the system is completely self contained.
OPERATOR: One operator with bathymetric survey and computer operation experience is required. A separate boat operator is required. The base station unit functions unmanned once set up.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment. Operation requires a basic understanding of bathymetric survey techniques and computer operation. A minimum of two days training, or prior experience with the system, is required.
FIELD MANTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

BSS now in Mark 2 Mod 2 version. Units are transportable via airline as checked (excess) luggage.
SHIPPING:
A complete unit with GPS accuracy comes packed in three shipping containers with the following sizes and weights:
Container A: L28 XW27 XH15 inches
WT. 65 lbs.
Container B: L19 XW25 XH16 inches
WT. 47 lbs.
Container C: L50 XW17 XH12 inches
WT. 55 lbs.
An O&M manual and guide is included. A full BSS with local DGPS capability consists of two units, thus, six shipping containers comprise the full system.
NOTE: The units must be shipped in the provided customized Hardigg shipping containers.

CABLE COUNTER

Manufacturer: Cavins Co.

Model: MCL **CATALOG** 7

Application:

The cable counter is a handheld tool used for measuring wire or line length when a degree of accuracy is required, or existing measuring devices are questionable.

General Description:

An interchangeable wheel system measures rope or line by use of a counter. The counter is connected to a wheel by gears, line passes through the unit, rotating the wheel which registers the measurement on the counter. The unit is supplied with a carrying case, mounting bracket, and bracket eye.

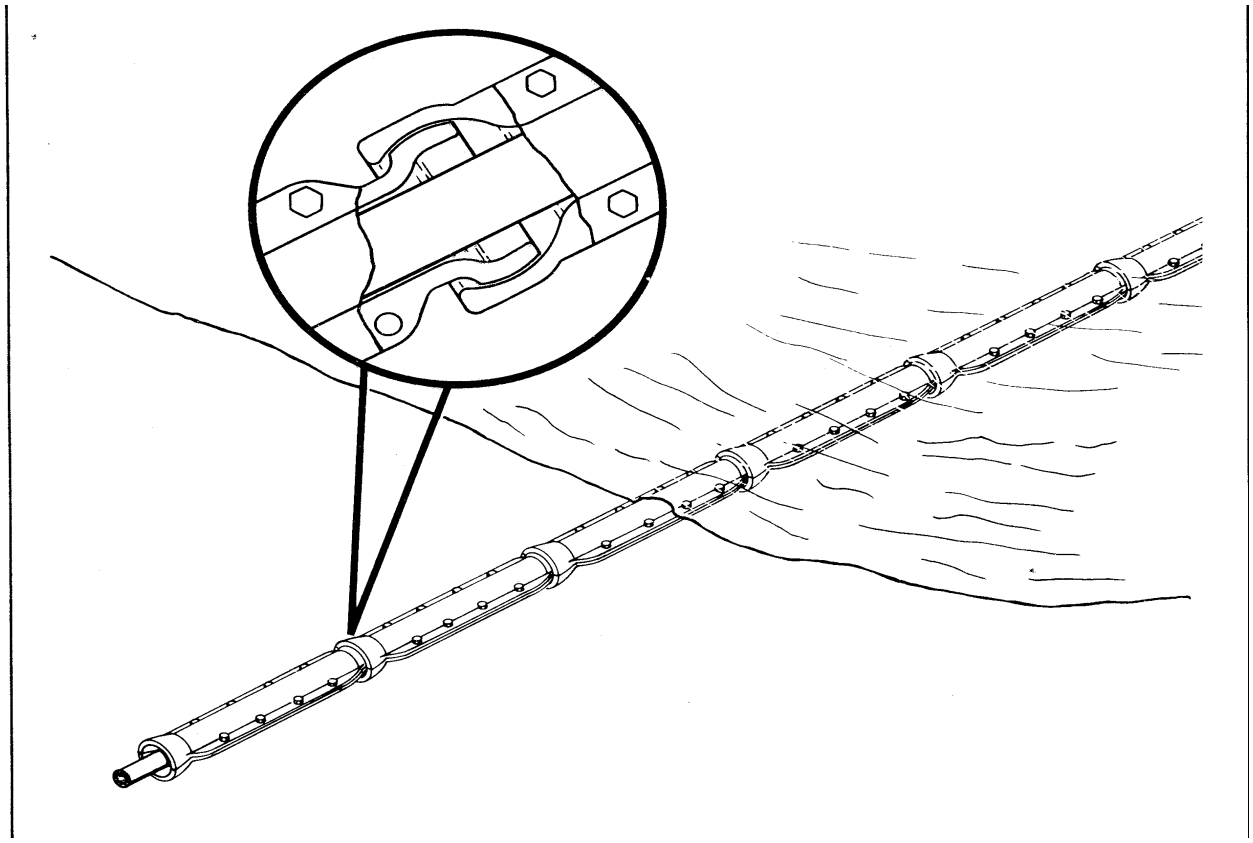
General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.

TRAINING: A basic mechanical background in equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Physical Specifications: For shipping: Model Length: 21 inches.
MCL Width: 12 inches. Height: 17 inches. 2.5 cuft. Weight: 53 lbs.



CABLE PROTECTION ASSEMBLY (SPLIT PIPE)

Manufacturer:

Model: CATALOG 0

Application:

The cable protection assembly provides a safeguard against cable motion and possible fatigue failure in hard rock seafloor locations that prevent cables from being buried beneath protective sediment. The cast-iron split pipe sections are obtainable in 3.5-inch and 5-inch inside diameter sizes (enclosed section) approximately 39 inches long.
When joined together longitudinally, the effective length (end of spherical bell to end of spherical bell) is 36 inches.

General Description:

The cable protection assembly is designed to provide armor protection for submarine cable. The cable protector consists of nodular iron (Grade 60-45 per ASTM A536) cast into two interchangeable half sections. The half sections are bolted together with 5/8 inch heavy hex bolts to form a pipelike longitudinal configuration with spherical, belled

ends which permit articulation from the horizontal of attached assembled pairs.

General Requirements:

3.5 inch split pipe on steel pallets of 50 half sections.
5 inch split pipe on steel pallets of 40 half sections.

Specifications:

3.5 inch Split Pipe
Inside diameter 3.5 inches.
Overall Outside diameter 8.0 inches.
Overall length 39 inches.
Weight (half section) in air 45 lbs.
In water 30 lbs.

5.0 inch Split Pipe
Inside diameter 5 inches.
Overall Out side diameter 9-1/2 inches.
Overall length 37 1/2 inches.
Weight (half section) in air 73 lbs.

Bolts are not provided with system.
Eight bolts and nuts required per section. Washers also needed.
Bolt size: 5/8-11 by 3.5 inches long

CABLE REEL STAND

Manufacturer: Smatco, Inc.

Model: **CATALOG** 8

Application:

Designed to pay out or haul in cable under controlled tensions and speeds.

General Description:

The cable reel stand is a hydraulically operated unit consisting of a skid-mounted mainframe, a detachable main shaft, lift swing arms, and a hydraulically controlled console. Maximum Cable reel load capacity is 40,000 lbs. The unit is capable of tensions up to 1,000 lbs. at a pull rate of 160 fpm and will hold up to 3,000 lbs. of tension with the manual brake.

General Requirements:

SUPPORT: Requires hydraulic power source capable of providing 15 gpm at 2000 psi
.

OPERATOR: One person is required for operating and maintaining the equipment.
TRAINING: A basic mechanical background in equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Maximum reel size is 126 inch diameter by 64 inches wide. Drive shaft diameter is 5.250 inches.
Maximum load capacity is 40,000 lbs.
L144 XW104 X 83 inches.
Weight: 6,000 lbs.

Hydraulic Power Unit

OCEI Catalog # 33 Manufacturer: NAVSEA DESIGN

Model: MODEL TWO

Provides flow from 1 gpm to 15 gpm.
Provides pressures from 150 psi to 2000 psi.
L68 X W23 X H44 INCHES. WEIGHT 1000 LBS.

CABLE REEL TRAILER

Manufacturer: Tulsa Power Products

Model: RT108D14HYD **CATALOG** 83

Application:

Designed to carry cable reels for overhead or underground cable installations, as well as a cable transporter.

General Description:

The unit is totally self-contained, utilizing diesel/hydraulic as the primary power source. The unit is equipped with a drive and steering wheel for maneuvering on the job site.

General Requirements:

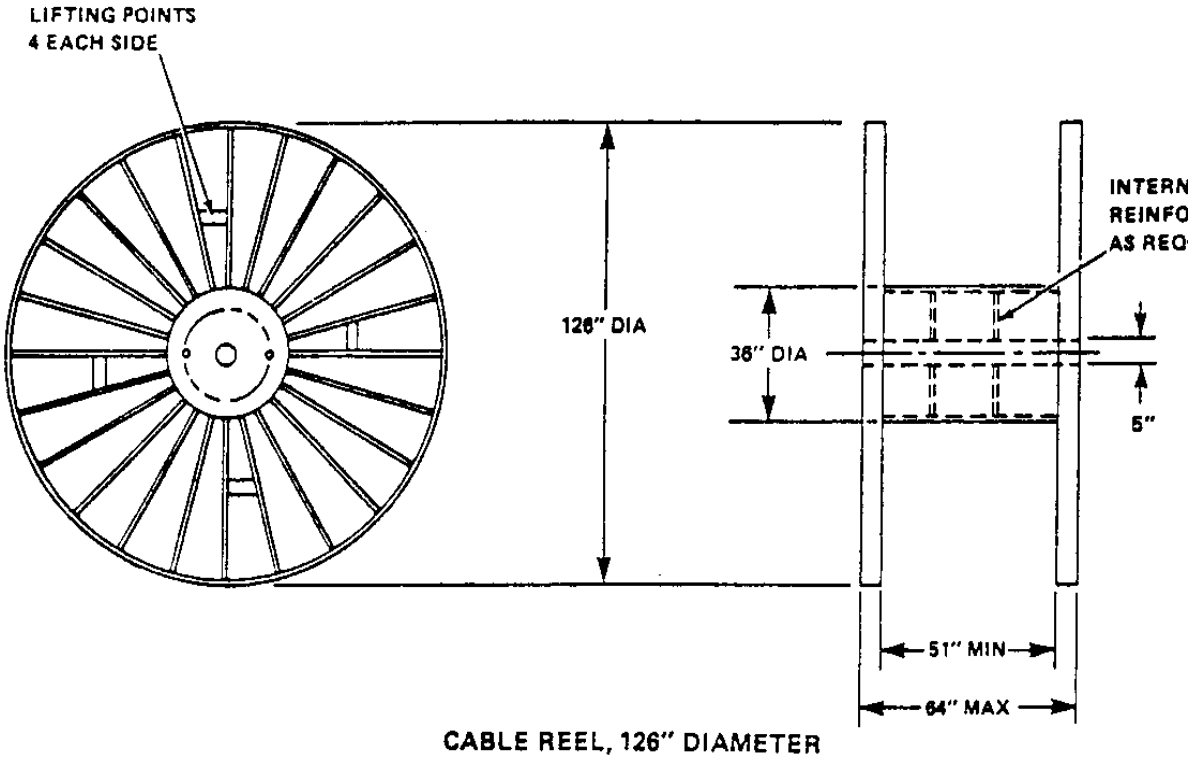
SUPPORT: The unit is provided with a pintle type draw bar for over the road towing.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic mechanical background in equipment operation and maintenance

is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The cable trailer will handle reels up to 108 in diameter, and up to 56 inches wide.
GVW is 20,000 lbs. with a 13,500 lb. cargo capacity.
L208 XW104 XH76 inches
Weight: 7,500 lbs.

Although unit moves slowly, care must be used when driving the unit.



CABLE REEL, 126" DIAMETER

CABLE STORAGE REEL 126

Manufacturer: various

Model: 126 **CATALOG** 9

Application:

The cable reels are designed for storing cable of various sizes and lengths. A large number of reels are available in the OCEI.

Cable storage

General Description:

The cable storage reels are interchangeable with those of the same size and capacity furnished with the original equipment and can be used with the Pengo Series 600 puller tension machines and Smatco or Morgan reel stands.

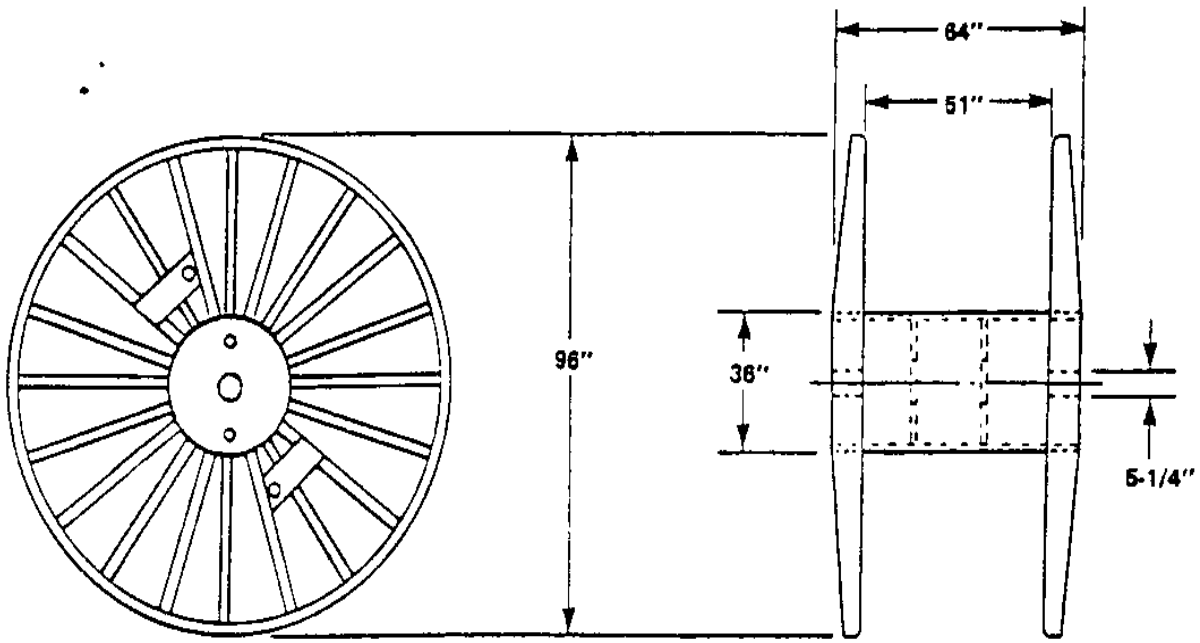
General Requirements:

SUPPORT: The unit is completely self contained. Normally used with cable reel

stands or Pengo winches available from the OCEI.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

126 inch diameter reel. Width 64 inches. Distance between flanges 51 inches. Core diameter 36 inches. Spindle diameter 5 inches. Empty weight : approx. 2,000 lbs.
Wire rope storage capacity: 3/4 inch, 74,149 feet; 1 inch, 41,406 feet; 1-1/2 inch, 18,537 feet; 2 inch, 10,342 feet.



CABLE REEL, 96" DIAMETER

CABLE STORAGE REEL 96

Manufacturer:

Model: 96 CATALOG 10

Application:

The cable reels are designed for storing cable of various sizes and lengths. A number of reels are available in the OCEI.

General Description:

The cable storage reels are interchangeable with those of the same size and capacity furnished with the original equipment and can be used with the Pengo Series 600 puller tension machines and Smatco or Morgan reel stands.

General Requirements:

SUPPORT: The unit is completely self contained. Normally used with cable reel stands or Pengo winches available from the OCEI.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or

operators manual.

Specifications:

Reel, 96-inch Diameter: Width: 64 in. Distance between flanges: 51 inches.
Core diameter: 36inches. Spindle diameter: 5 inches. Empty weight: approx. 1,785 lbs.
Cable storage capacity: 3/4 inch, 56,000 feet; 1 inch, 31,000 ft.; 1-1/2 inch. 13,500 ft.; 2 inch. 7,500 feet

CABLE TRACKING PROBE, UNDERWATER

Manufacturer: Hewlett Packard / Western Instrument

Model: X76061 **CATALOG** 11

Application:

The underwater cable tracking probe is part of the diver-operated cable tracking system which is used for tracking and locating surface-laid and buried cable, estimating the depth of the buried cable, and locating conductor faults in the buried cable. The system consists of a shore based signal injector and a submersible hand held tracking probe.

General Description:

A dual frequency shore based transmitter (catalogue # 5) is used to impress a tracking tone which is tracked by the diver using cable tracking probe. The handheld cable tracking probe is designed to detect low level electromagnetic fields at the appropriate frequency. The strength of the received signal is displayed on a light bar or as an audio output for an underwater earphone. The unit is powered by a rechargeable battery pack and comes with a battery charger and a spare pack.

General Requirements:

SUPPORT: The shore base signal injector transmitter requires a 115 or 230 volt, 60 Hz power supply. 115V 50-60 Hz is also required to operate the battery charger for the divers probe battery pack.
OPERATOR: A trained diver and a technician operator to install and maintain the equipment.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Operating frequency #1 25 Hz #2 1,024 Hz
Controls: frequency select switch and diver bonephone speaker
Battery Pack Output Voltage 9 volts DC
Battery Life 4 hrs.
Recharge Time 15 hrs.
Physical Specifications
Weight 8.8 lbs.
Overall dimension including case: L = 22 inches, W = 8 inches, H = 19 inches

Shore Based Signal Injector

OCEI Catalog # 5 Manufacturer:

Model:

CONCRETE CUTTING CHAIN SAW

Manufacturer: Stanley

Model: DS 11515 **CATALOG** 14

Application:

Primarily designed for underwater use as a demolition tool. Saw can also be used on the surface.

General Description:

The hydraulically operated chain saw is equipped with a 3/8-inch pitch 32 segment diamond impregnated chain. The saw is designed to cut concrete, reinforced concrete, (wire or rebar reinforced), brick, concrete block, masonry or stone. A 15-inch bar with internal channels for water lubrication allows cuts up to 15 inches in depth.

General Requirements:

SUPPORT: Hydraulic power source capable of producing 2000 psi at 8 gpm.

OPERATOR: Divers trained in the operation, with special emphasis on the safety of operating underwater mechanical equipment.
TRAINING: Special training and certification on the operation of the cutter is required. U.S. Navy Underwater Construction Teams normally posses the required training.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Capacity: 15 inches/38 cm cutting depth
Chain Type: 3/8-inch pitch with 32 diamond segments
Bar: 15 inches/38 cm capacity with internal channels for water lubrication
Weight: 26 lbs/1 1.8 kg
Length w/Bar and Chain 35 inches/89 cm
Width: 9 inches/22.9 cm
Pressure : 2,000 psi/140 bar
Flow Range: 7-9 gpm/26-34 lpm
Optimum Flow: 8 gpm/30 Ipm
Chain Speed: (Cutting) 5,500 fpm/27.9 m/s
(Free Running) 5,900 fpm/30 m/s
Shipping :
Steel Box
L45 X W15 X H12 inches
WT. 150 LBS.

APPLICABLE (SEPARATELY AVAILABLE) HYDRAULIC POWER SUPPLIES:

HYDRAULIC POWER UNIT, MOD TWO
OCEI#:33 Manufacturer: NAVSEA DESIGN
Model: MODEL TWO
Provides flow from 1 gpm to 15 gpm.
Provides pressures from 150 psi to 2000 psi.
L68 X W23 X H44 INCHES. WEIGHT 1000 LBS.

HYDRAULIC POWER UNIT, PORTABLE
OCEI#: 34 Manufacturer: PortaCo
Model: D-17510-15-W
10 GPM at 2000 PSI

CURRENT MEASUREMENT SYSTEM - ADP

Manufacturer: SDI and Sontek

Model: CATALOG 91

Application:

The Current Measurement System - Acoustic Doppler Profiling (CMS-ADP) is designed to measure, store, and transmit to shore, current speed and direction, and tidal data in water depths from 15 to 200 feet. Current profile data is collected by the bottom resting acoustic doppler profiling unit at sampling times selected by the user, and is stored in a computer located in the tethered surface buoy. The data can be recovered from a distance of up to 8 miles anytime during the system's deployment using the radio modem link. The system is designed so that it can be deployed and recovered by hand from a small inflatable boat or other vessel of opportunity. On site, deployment of the system can easily be accomplished by two people in less than one hour.

General Description:

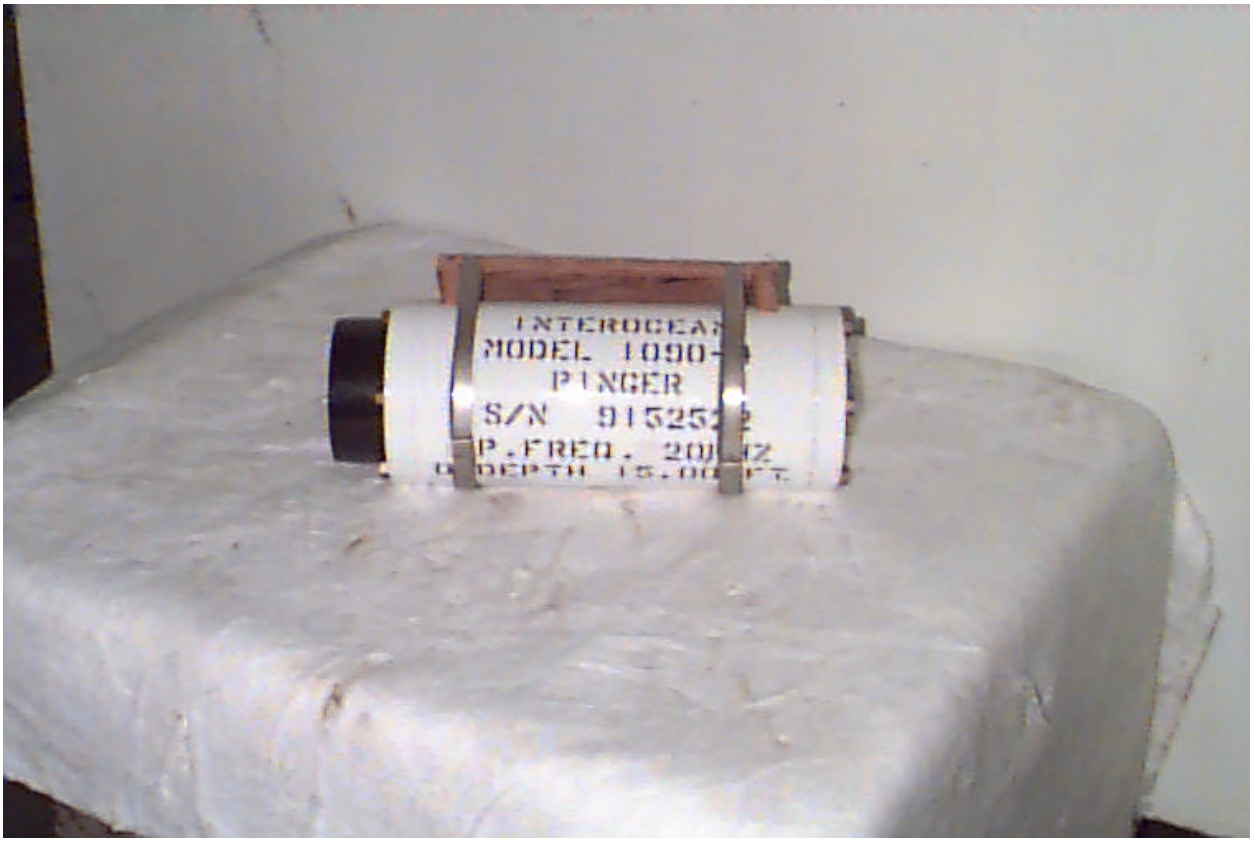
The CMS consists of a bottom resting Acoustic Doppler Profiling (ADP) current meter mounted in a gimbal stand and a sea-surface telemetry buoy. The ADP and the telemetry buoy are connected together with an electro-mechanical cable. A radio modem receiver, laptop computer, and supporting software are used to collect data from the surface buoy. The radio modem receiver and laptop computer are located on shore or in boat. The CMS has enough battery power to permit continuous data collection over a 5-day deployment period. The battery can be recharged for multiple deployments.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: Two persons are required for deployment and recovery. One person is capable of operating and maintaining the equipment.
TRAINING: The system is a computer-controlled acoustic instrument, and requires a familiarity with PC operation and simple programing steps. A detailed O&M manual is included, but 2 days training and practice is recommended before deployment of the unit.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Profiling range: up to 200 ft water depth
Accuracy: +/- 1% or +/- 0.1 knot, whichever is greater
Collects current samples in the water column every 3.5 feet
Weight of ADP: 54 lbs.
Telemetry Buoy weight: 42 lbs.
Data Recovery at distance up to 8 miles (line of sight)
SHIPPING:
The system comes packed in the following four shipping containers:
Case 1: L24 XW19 XH19 inches
WT. 80 lbs.
Case 2: L43 XW28 XH22 inches
WT. 112 lbs.
Case 3: L37 XW28 XH19 inches
WT. 98 lbs.
Case 4: L39 XW30 XH18 inches
WT. 95 lbs.
NOTE:The system must be transported in the provided customized Hardigg shipping containers



DEEP ACOUSTIC PINGER

Manufacturer: INTEROCEAN SYS INC.

Model: 1090-1 **CATALOG** 12

Application:

The Deep Acoustic Pinger is used in situations where the location and the inclination of underwater equipment and/or other objects must be determined.

General Description:

The Deep Acoustic Pinger is a retrievable, battery powered unit capable of operation in waters up to 8,000 meters deep for a period of 3 days from activation. The Acoustic Pinger operates in the 15 kHz range. In additon to providing location information, the acoustic pinger automatically changes the ping rate when the object is in a 45 degree to vertical inclination.

General Requirements:

SUPPORT: The pinger is supplied with one battery. The user must supply additional

batteries as required by the project, along with a receiver and hydrophone capable of receiving in the 15 kHz range.
OPERATOR: One trained person familiar with the operation of electronic equipment can operate the unit.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Length 18 inches. Diameter 6.5 inches. Weight 36 lbs.

DIGITAL ULTRASONIC THICKNESS GAUGE

Manufacturer: Cygnus

Model: Cygnus 1 **CATALOG** 63

Application:

Designed to measure metal thickness from 0.040 inches to 9.995 inches, depending on material. Unit can be operated on the surface or to water depths up to 1000 feet.

General Description:

Cygnus digital gauges use the multiple echo technique to perform non-destructive ultrasonic thickness testing. Measurements can be taken on structures without removal or damage to protective coatings. Uncoated rough surfaces require removal of scale or loose rust. Packed in a briefcase

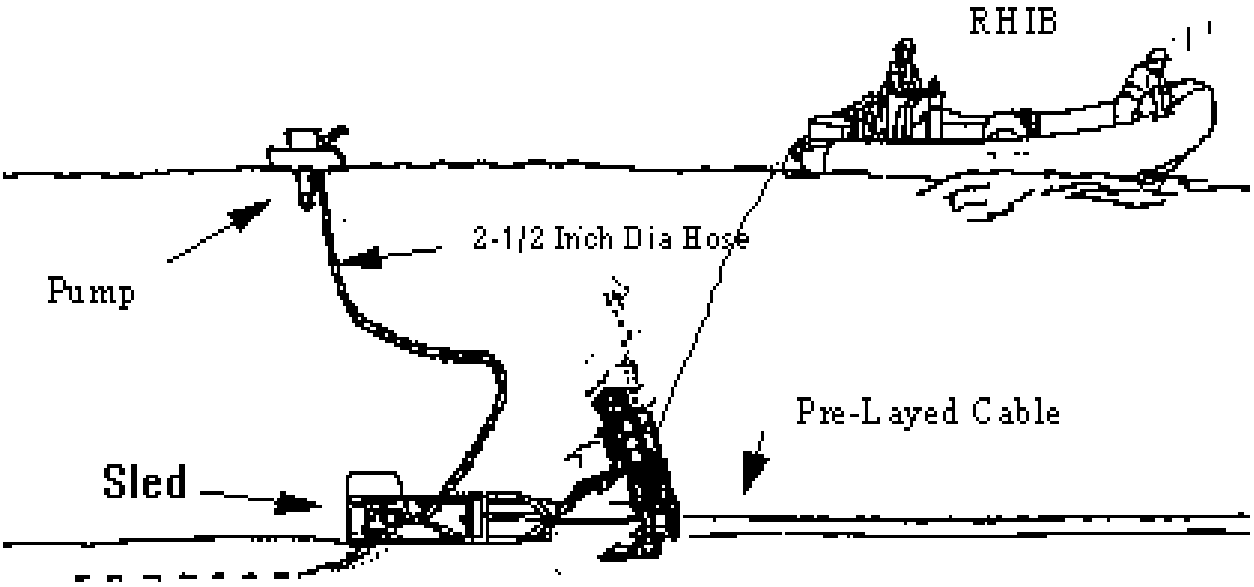
General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.

TRAINING: A knowledge of electrical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Measures metal thickness from 0.040 inches to 9.995 inches, depending on material.



DIVER CABLE BURIAL SLED

Manufacturer: NFESC

Model: N/A **CATALOG** 93

Application:

The diver-pulled, cable burial sled is designed to bury pre-laid cable (1/4 in. to 1/2 in. diameter) to a depth of 12 in. in loose, unconsolidated sands using a water-jet-assisted stinger. The floating cable burial sled pump may also be used to support manual cable burial with diver-operated jetting nozzle and fluidizer, or to support diver-operated dredging operations.

General Description:

The system consists of a cable burial sled and a sea-surface-float-mounted 30 hp outboard engine/pump combination that provides seawater at 120 gpm and 120 psi to a stinger mounted on the sled. The seawater from the stinger fluidizes the soil in front of the plow blade on the sled. Drawbar force to pull the sled on the seafloor is typically less than 100 lbs. Burial rates of up to 1 mile of cable per day have been achieved under ideal conditions. System is limited to water depths of 100 feet for practical

reasons. System is complete including the float for the pump, hose, eductor, fluidizer, and several jetting nozzles for manual burial of cables underwater or on the beach.

General Requirements:

TRAINING: One day training in the field is suggested to familiarize divers and operators with this equipment prior to a cable burial mission.
FIELD MAINTENANCE: Rinsing off equipment and inspecting equipment for wear or damage is required. For extended deployments, maintenance on the 30 hp OMC outboard engine may be required (see O&M manual).
SPECIAL: In addition to the sled and engine/pump combination, the diver cable burial sled system also comes with the following:

- -gold dredge eductor
- -fluidizer
- -jet nozzle

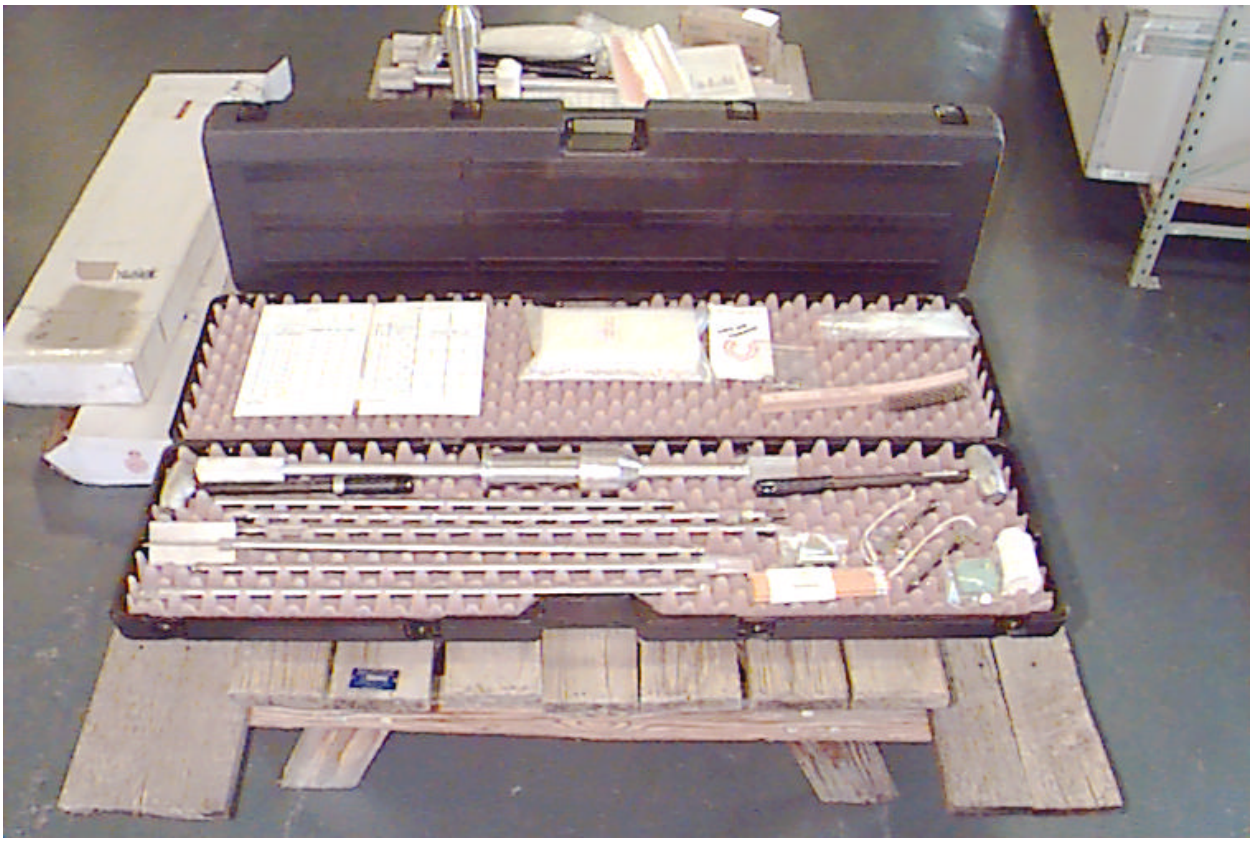
These items can be used with the engine/pump combination to provide for manual cable burial, general jetting and a sand transport capability.

Specifications:

Cable Burial Sled: burial of small diameter cables to 1/2 in. in unconsolidated sand.
Length: 4 ft. - 10 in. (w/o stinger attached)
Width: 35 in.
Height: 12 in. (w/o stinger attached)
Weight: 48 lbs. (dry w/stinger)

Engine pump (w/float)
OCEI #: 0 Manufacturer: OMC and NFESC
Model: N/A
Length: 8 ft 4 in x 4 ft x 4 ft. 310 lbs

Hoses:
OCEI# 0 Manufacturer: NFESC
Model: N/A
Diameter: 2.5 in.
Lengths: 2 25-ft lengths, 2 50-ft lengths



DIVER GEOTECHNICAL MSPT/ VANE SHEAR KIT

Manufacturer: NFESC

Model: **CATALOG** 89

Application:

Designed to enable divers to gather marine geotechnical (sea floor) data on soil strength in the upper 3 ft of the soil profile. The information gathered by using this equipment can assist in solving engineering problems such as verifying sufficient strength for OPDS, calculating embedment depths and breakout forces, and assisting in designing anchoring systems.

General Description:

The tools and their uses are: Vane Shear Kit: The vane shear tool consists of a shaft with a four-bladed vane and is used to take in place strength measurements in cohesive soils only (clays and muds). Miniature standard penetration tool : The MSPT is a cone-shaped device with an attached hammer and is used to take in-place measurements in granular or sandy soils. This "Diver Geotechnical MSPT/Vane Shear Kit" was formerly part of the larger "Geotechnical Diver Tools," the

remaining tools of which are in that separate OCEI item, catalog # 35.

General Requirements:

The vane shear tool has four interchangeable vanes of increasing size. The harder the soil, the smaller the vane that should be utilized. As soil typically increases in strength with soil depth, it may be necessary to retract the vane and switch to a smaller vane for deeper soil depths.
OPERATOR: The tools are designed to be used by two divers.
TRAINING: Two hours of technical and practical in-field training should be accomplished prior to actual operations.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The tools can be operated from the beach, a pier or from a diver support vehicle. The tools are designed for use in all diving conditions. They are constructed of materials that are seawater compatible and negatively buoyant.The vane shear tool has four interchangeable vanes of increasing size. The harder the soil, the smaller the vane that should be utilized.
MSPT and vane shear tools come packaged in a single shipping container with an O&M manual.
SHIPPING:
Size:L48 XW18 XH8 inches
WT. 50 lbs.

DIVER HELMET MOUNTED LIGHTING SYSTEM

Manufacturer: SIMRAD, INC.

Model: DQ 250 **CATALOG** 16

Application:

Diver operated submersible lighting system was designed to be helmet mounted and provide 250 watts of lighting for underwater operations.
Units have some interchangeability by design.

General Description:

The Diver Helmet Mounted Lighting System (DHMLS) consists of a self-contained Surface Control Console, which controls the operation of a pair of Diver Helmet Mounted Lamps. The system consists of the Surface Control Console (SCC), the Umbilical Cable assemblies (2), and a pair of submersible Lamp assemblies. The system is provided with mounting brackets.The control console provides two individual lamp intensity controls. Each control varies the lamp intensity over the full power range of the lamps. The internal circuitry provides compensation for umbilical and interconnect power losses, and delivers a rated 250 wafts to each lamp at the full

intensity setting.The surface control console is fully rain tight, allowing operation under adverse surface conditions.

General Requirements:

SUPPORT: Requires 115 volt AC power source.
OPERATOR: One diver and a surface operator is required to operate and monitor the system.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

CONSOLE
Surface control unit
Electrical Input Power Requirement :115 VAC ± 15 VAC 60 Hz ± 3
Output Power : Variable to 250 Watts
Size :17.5" X 11.6" X 7.1" with cover installed
Weight : 25 lbs.
Construction : Molded ABS container with anodized aluminum front panel.
UMBILICAL CABLE
Jacket Material : Poly-urethane (0.041' wall thickness)
Conductors : 3 each #1 8 AWG, 16/30 copper stranding
Length : 330 feet
Diameter : 0.26" nominal
Weight : 0.06 lbs/ft in air
DIVER HELMET MOUNTED LAMPS
Electrical : Input Voltage : 0 to 120 VAC
Power Output : 250 Watts, 4800 lumens when operated at full power
Color Temperature : 30000 K
Bulb Type : 250 O/CL Hydro Vision P/N 17570-000
Length : 3.650 inches without connector. 5.425 inches including connector.
Diameter : 2.875 inches
Weight : 14.75 oz. in air. 10.00 oz. in water.
Working Depth : 1000 FSW

GENERATOR, 5.5 Kw

OCEI Catalog # 27 Manufacturer: Yanmar

Model: YDG 5500

Provides 120/220 Volt 60 cycle, single phase AC power. Rated output is 45 amperes. Unit also provides DC power for battery charging.

DIVER NAVIGATION SYSTEM DNS

Manufacturer: Oceaneering Intl.

Model: N/A **CATALOG** 0

Application:

Navigation system that provides a diver with the coordinates of his position within a 3000 ft. by 6000 ft. grid. The DNS computes the diver's position by measuring the range from the receiver to each transmitter and the known baseline length.

General Description:

The grid is formed about a baseline between two seafloor mounted, diver-installed bench marks (transmitters). The major system components are: two transmitters; one receiver; one battery charger; and two mooring systems. All components are stored in shipping containers. A hand-held display, connected to a receiver, which is strapped on the diver's tanks, provides the diver with a display of X, Y, depth, and FIX number. The diver can record up to 199 positions by depressing the FIX button on the display. The data is stored in a "fix" data file. Software is provided to upload the data from the receiver to a PC or disk. The FIX data are relative to the master and slave transmitter

positions. The software can output this data in an XYZ or DXF file format and can also convert the data to Absolute Universal Transverse Mecator (AUTM) coordinates if coordinates of the transmitters are known. The system is designed to operate in diver depths, but may become range limited in shallow water. The area of coverage is 3000 ft. (baseline length) by 6000 ft., consisting of two 3000 ft. by 3000 ft. mirror images about the baseline. The DNS does not differentiate between the mirror image areas, thus the diver must know where he is relative to the baseline. Three data lights - green, yellow, and red - indicate the overall quality of the displayed data. "LOSS" is displayed in place of the diver's position during prolonged signal loss, until the problem is corrected.

General Requirements:

SUPPORT: The DNS battery charger requires a 115 V 60 Hz power source to charge the DNS batteries. A 386 or better computer with a serial port is needed to upload data. Spares are provided with each system. Each spares kit consist of: one transmitter, one receiver (including display and tank adapter), two battery packs, one mooring system (stored with the other two mooring systems), and one set of miscellaneous support and operational cables.

FIELD MAINTENANCE: Rinsing and cleaning the equipment and charging batteries is required as stated in the O&M manual.

SPECIAL: Conduct an "in air" bench test prior to shipping.

Specifications:

Grid size: 3000 ft. X 6000 ft.
Diver recorded positions: 199
Data output (software): XYZ or DXF
Battery time (per charge): up to 12 hours

Transmitter w/battery pack

OCEI Catalog # 1375 Manufacturer: Oceaneering

Model: N/A

In water weight: 0.5 buoyant
Dry weight: 16 lbs.
Dimensions: 24 in. X 5.5 in.

DYNAMOMETER END LINE, 20K

Manufacturer: Martin Decker

Model: SD1800406 **CATALOG** 18

Application:

Used to measure end of line tensions up to 20,000 lbs.

General Description:

The end of line dynamometer is a hydraulic load cell system. The system consists of a load cell fitted with a load hook, pickup eye, and a gauge with a 50 foot standoff hose.

General Requirements:

OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: Knowledge of mechanical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Accuracy is plus or minus two percent.

DYNAMOMETER IN-LINE, 30K - 40K

Manufacturer: DILLON

Model: 3.277.705 **CATALOG** 19

Application:

Designed to be used for various applications where continuous readouts on a static line is required. The units are not designed for dynamic shock loads, loads or weight should be gradually applied.

General Description:

The in-line dynamometer is a self contained monitoring system designed to measure tension applied to wire rope. Two models are available, one is designed to measure up to 30,000 pounds while the other is designed to measure up to 40,000 pounds. It may be installed vertically or horizontally depending on the requirements of the job. Two alloy steel shackles are provided with the unit which are suitable for use with hooks, cables, turnbuckles or other suitable fittings. The direct reading 6 inch dial is incorporated as a part of the dynamometer.

General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic mechanical background in equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Dynamometer assembly is shipped in a single container:
L39 XW11XH15 inches.
Weight: 95 lbs.

DYNAMOMETER, ELECTRONIC

Manufacturer: Measurement Systems International

Model: 7200 series **CATALOG** 21

Application:

Designed to measure tension loads in crane and construction applications. Can be installed in a variety of other applications.

General Description:

The DYNA-LINK is a self contained, weather proof, electronic instrument with operator programmable measurement options of either gross or peak tension. An optional remote readout is included in the kit. The unit requires two C cell batteries and will operate for approximately 500 hours .

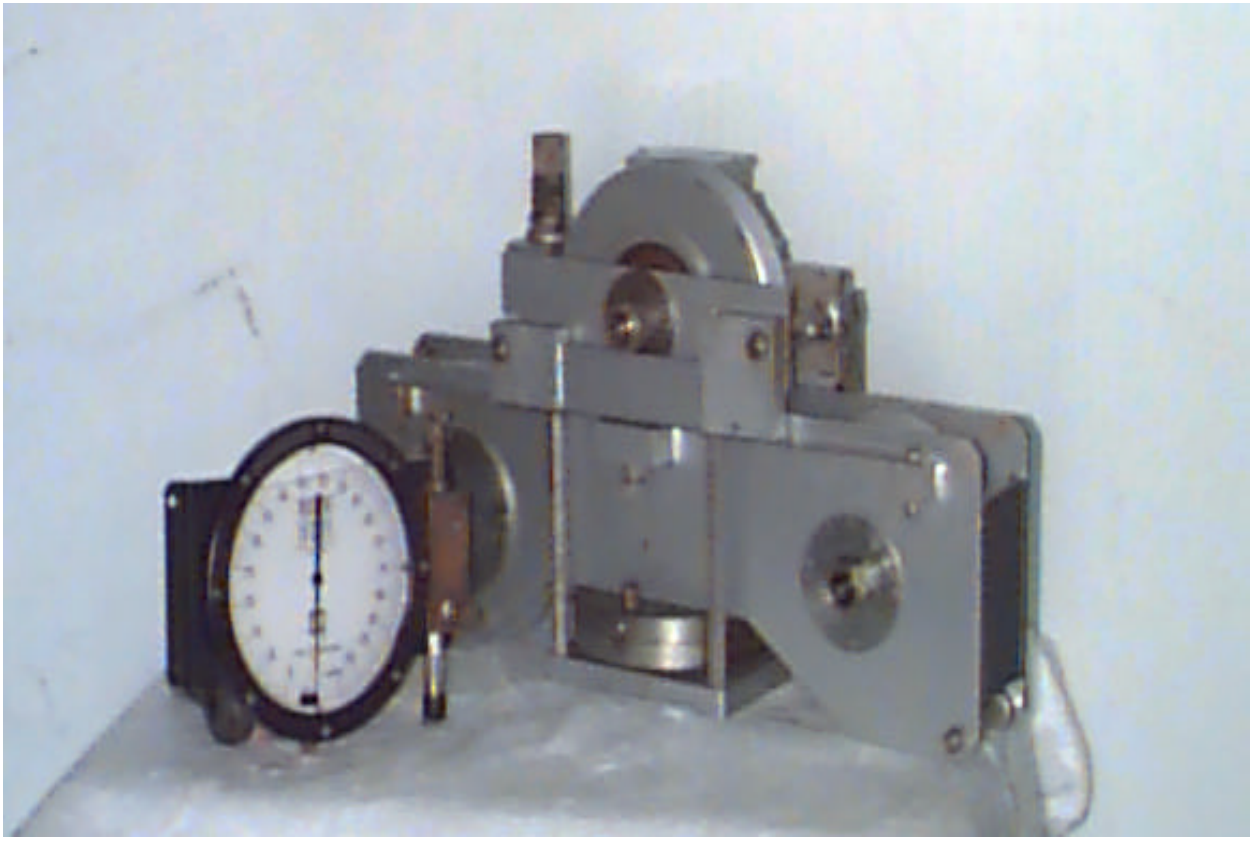
General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.

TRAINING: A basic background in equipment rigging operations is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Available in 50K, 220K, & 400K.



DYNAMOMETER, RUNNING LINE

Manufacturer: Martin Decker

Model: UD **CATALOG** 20

Application:

Dynamometer is designed to measure wire tension while wire is in motion.

General Description:

The UD series wire line tensiometers are self contained units consisting of a hydraulic compression load cell, connecting hose, and a remote readout gauge. The unit serves primarily as a monitoring system providing the operator with a visual indication of the tension on the line being monitored.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic knowledge of mechanical equipment operations and applications

are required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

100K wire capacity is 1 to 1 1/2 inch.
300K wire capacity is 1 1/2 to 2 inch
400K wire capacity is 2 to 2 1/2 inch
L58 XW30 XH30 inches
Weight: 670 lbs.

FLASHER, SUBMERSIBLE

Manufacturer: Cubic Communications

Model: SF- 500 **CATALOG** 22

Application:

Designed for use as a visual aid to locate untethered instrument packages and submersible vehicles upon surfacing. Units could also be used as underwater markers for divers, navigation aids, or geographic position indicators.

General Description:

The SF 500 is a lightweight, self contained unit housed in an anodized aluminum container 1.5 inches in diameter by 21.5 inches long. The housing is rated for 10,000 psi (23,000 feet).

General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.

TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

21.5 inches long by 1.5 inches in diameter.
Weight: 2.8 lbs.

Batteries will last approximately 100 hours.

FLOWMETER

Manufacturer: General Oceanics, Inc.

Model: 2035 /2031H **CATALOG** 23

Application:

This system was designed as a compact, general purpose instrument for flow measurements in rivers, estuaries, canals, sewerage outfalls, and offshore applications.

General Description:

The Model 2035 MK 4 is a microprocessor controlled data acquisition system designed to provide velocity, distance and volume data derived from the Model 2031H Flowmeter. The Flowmeter incorporates a magnetically triggered switch which sends pulses at a rate proportional to the fluid speed. The circuitry within the Model 2035 MK 4 converts these pulses into fluid velocity, volume or distance on the display. The unit calculates the fluid velocity using a highly stable crystal controlled time base. The well defined characteristics of the 2031H and the stable data acquisition time base foregoes the necessity of repeated, time consuming calibration procedures. The large

two line LCD displays the selected impeller type, either High speed (H) or Low speed (L) and the real time fluid velocity. Both the impeller type and velocity units are changed by the setting of a user accessible DIP switch. The readout unit is powered by a single 9 vdc battery.

General Requirements:

SUPPORT: This unit is completely self contained.
OPERATOR: One operator is required to deploy the flowmeter, and monitor the readout unit.
TRAINING: Thorough familiarization with the operator's manual.
FIELD MAINTENANCE: Preventive maintenance is required IAW instruction and/or operator's manual.

Specifications:

Range and threshold :
Model 2031H (standard rotor)
Threshold 10cm/sec (1/5 Knot)
Range - 10 cm/sec (1/5 Knot) to 7.9 M/sec (15 knots)
Model 2031HR2 (low speed rotor)
Threshold 2 cm/sec (1/25 Knot)
Range - 2 cm/sec (1/25 Knot) to 100 cm/sec (2 Knots)
Operating Temperature - 0 to +50 Degrees Celsius
Accuracy - +/- l percent Full Scale

Shipping container size and weight:
Dimensions: L36 X W14 X H15 inches
Weight: 20 lbs.

GENERATOR / WELDER 8,000 WATT

Manufacturer: Miller

Model: 225D **CATALOG** 28

Application:

Designed as a portable generator/welder.

General Description:

The Miller generator/ welder is powered by an air cooled diesel engine. The unit is compact and can moved about with a small fork lift or overhead lifting device. The unit is not supplied with welding equipment or electrical power cables.

General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining welding equipment.
TRAINING: A basic mechanical background in welding equipment operation and maintenance is required.

FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Generator: 120/240 volt AC, 60 cycle, single phase, 8 kVA/kW, 70/35A.
Welder: 100 percent duty cycle (10 minutes) at 225 amperes AC, 210 amperes.
CC/DC, 200 amperes CV/DC
L46 XW19 XH38 inches.
Weight: 660 lbs.

GENERATOR, PORTABLE

Manufacturer: Honda

Model: **CATALOG** 26

Application:

Designed to provide AC power to operate small electric tools, lights, or battery chargers.

General Description:

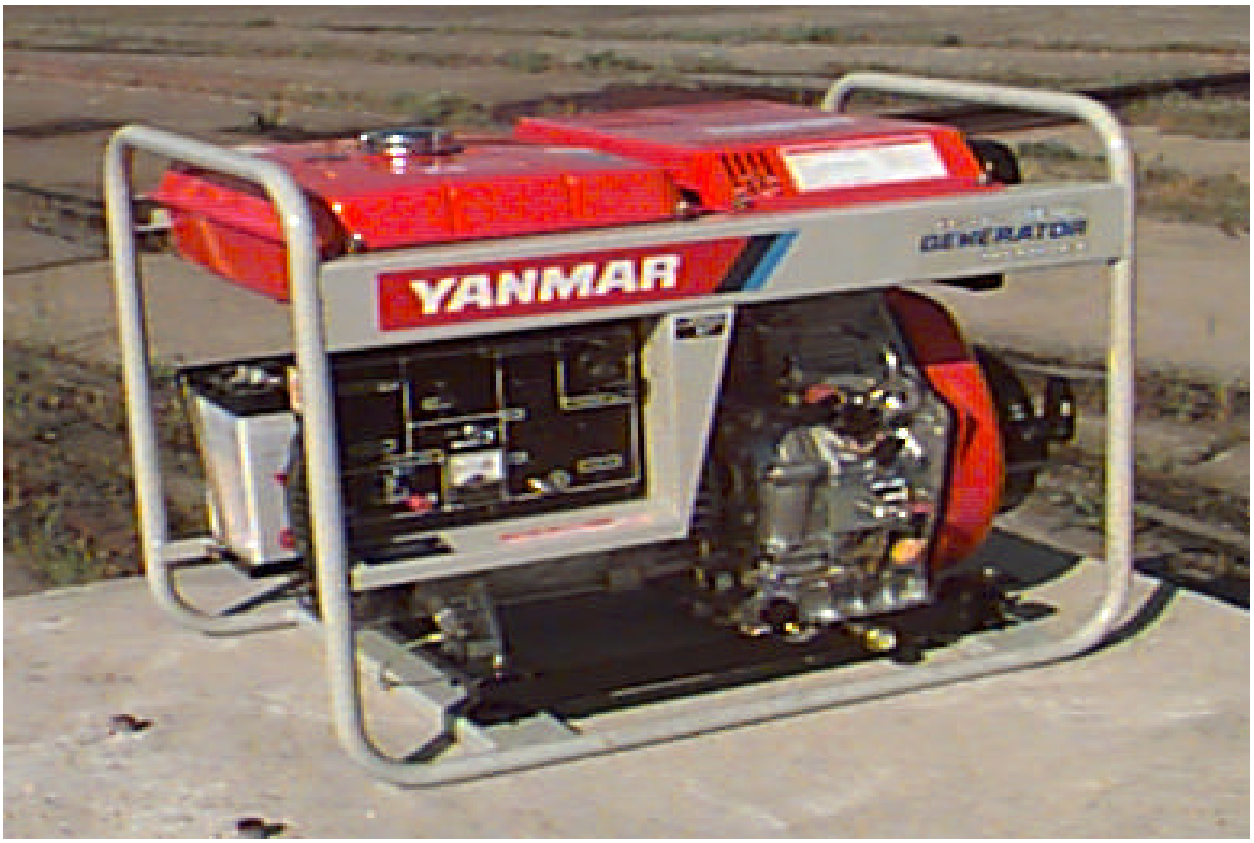
Small compact portable gasoline driven generator set.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic knowledge of mechanical equipment operations and applications is required.

Specifications:

600 watt 115 volt AC



GENERATOR, 5.5 kW

Manufacturer: Yanmar

Model: YDG 5500 **CATALOG** 27

Application:

Designed to provide portable AC power at remote locations.

General Description:

The Yanmar is a self contained air cooled diesel powered portable generator mounted in a roll cage. Two AC outlets and a DC output terminal are located on the control panel.

General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One operator who is familiar with the operation and maintenance of mechanical equipment is required to monitor the unit in operation.
TRAINING: Knowledge of mechanical equipment operations and maintenance is

required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Provides 120/220 Volt 60 cycle, single phase AC power. Rated output is 45 amperes. Unit also provides DC power for battery charging.

GENERATOR, DIESEL 440 V 150 kW

Manufacturer: Western Branch Diesel

Model: 16165 **CATALOG** 25

Application:

Designed to provide power for LCE operations. May be used as a primary or backup power source for other operations.

General Description:

The unit is a totally self contained, portable diesel generator, skid-mounted, and weather enclosed.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic knowledge of mechanical equipment operations and applications is required.

FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

150 kW 260/450 VAC 3 Phase 60 Hz. Provided with a 300 amp control panel and 300 amp trip circuit breaker.

GENERATOR, DIESEL 440V 37.5 kW

Manufacturer: Detroit Diesel Electric

Model: DDC 40 **CATALOG** 24

Application:

Designed to provide electrical power for a variety of construction equipment.

General Description:

The DDC 40 is a totally self contained, portable diesel generator, skid-mounted, and weather enclosed.

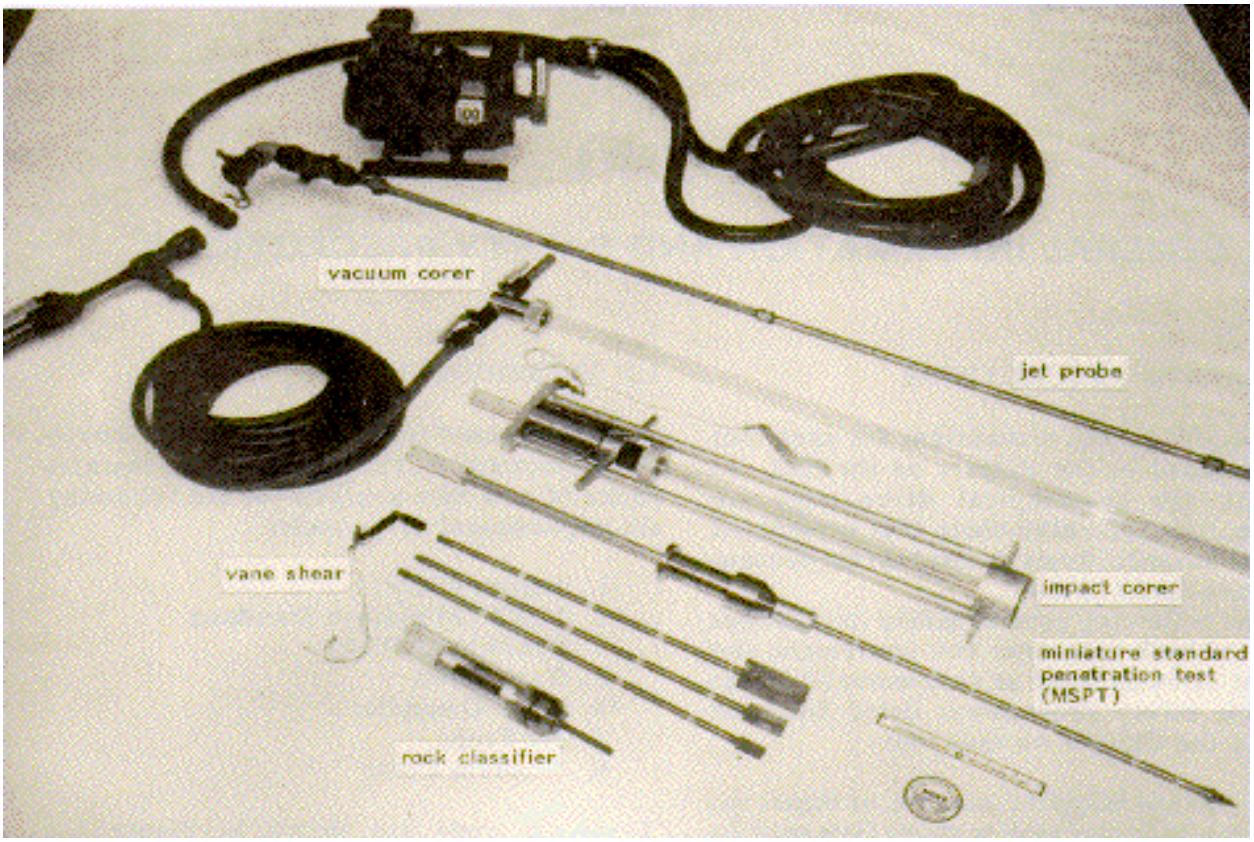
General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic knowledge of mechanical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or

operator's manual.

Specifications:

440 volts A/C
Three phase, sixty cycle
46.3 kVA
37.5 kW
58.8 amps
Lug hookup
L83 XW34 XH76 inches
Weight: 2000 lbs. cube 124



GEOTECHNICAL DIVER TOOLS

Manufacturer: Naval Civil Engineering Laboratory (NCEL)

Model: N/A **CATALOG** 35

Application:

Designed to enable divers to gather marine geotechnical (sea floor) data. The information gathered by using this equipment can assist in solving engineering problems such as calculating embedment depths and breakout forces, assists in designing anchoring systems, and a host of other information on the composition of the sea floor.

General Description:

Impact Corer Kit (1703 or 1723) : The Impact Corer Kit takes a core sample 30 inches long and 1.5 inches in diameter. The corer includes a piston corer which is used for cohesive or softer soil and an impact corer which is used for harder/granular soils.

Jet Probe and Vacuum Corer Kit (1701 or 1712) : The Jet Probe is made up of a 1/2-inch-diameter steel rod connected to a water pump. Water flowing through the pipe

allows the rod to be inserted in the seabottom to a maximum of 10 feet. The vacuum corer takes a soil sample up to 8 feet long in a clear plastic core tube using vacuum created by an eductor from the water pump.

The MSPT and Vane Shear device that were formerly part of this kit and now in the Diver Geotechnical MSPT/Vane Shear Kit, catalog # 89. This latter kit should be used for in-situ shear strength determinations.

General Requirements:

OPERATOR: The tools are designed to be used by two divers.
TRAINING: One day of technical and practical in field training should be accomplished prior to actual operations.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The tools can be operated from the beach, a pier or from a diver support vehicle in any of the world's oceans, bays, harbors, rivers or lakes. The tools are designed to operate in water depths from 0 to 130 feet, a 1-knot current, sea state 3, and water temperatures from 28 to 90 degrees F. They are constructed of materials that are seawater compatible, as well as neutrally or negatively buoyant.

Impact Corer

OCEI Catalog # 35 Manufacturer: NFESC

Model: 1703

Size: 48 in. X 24 in. X 24 in.
Weight: 275 lbs.

Jet Probe

OCEI Catalog # 35 Manufacturer: NFESC

Model: 1707

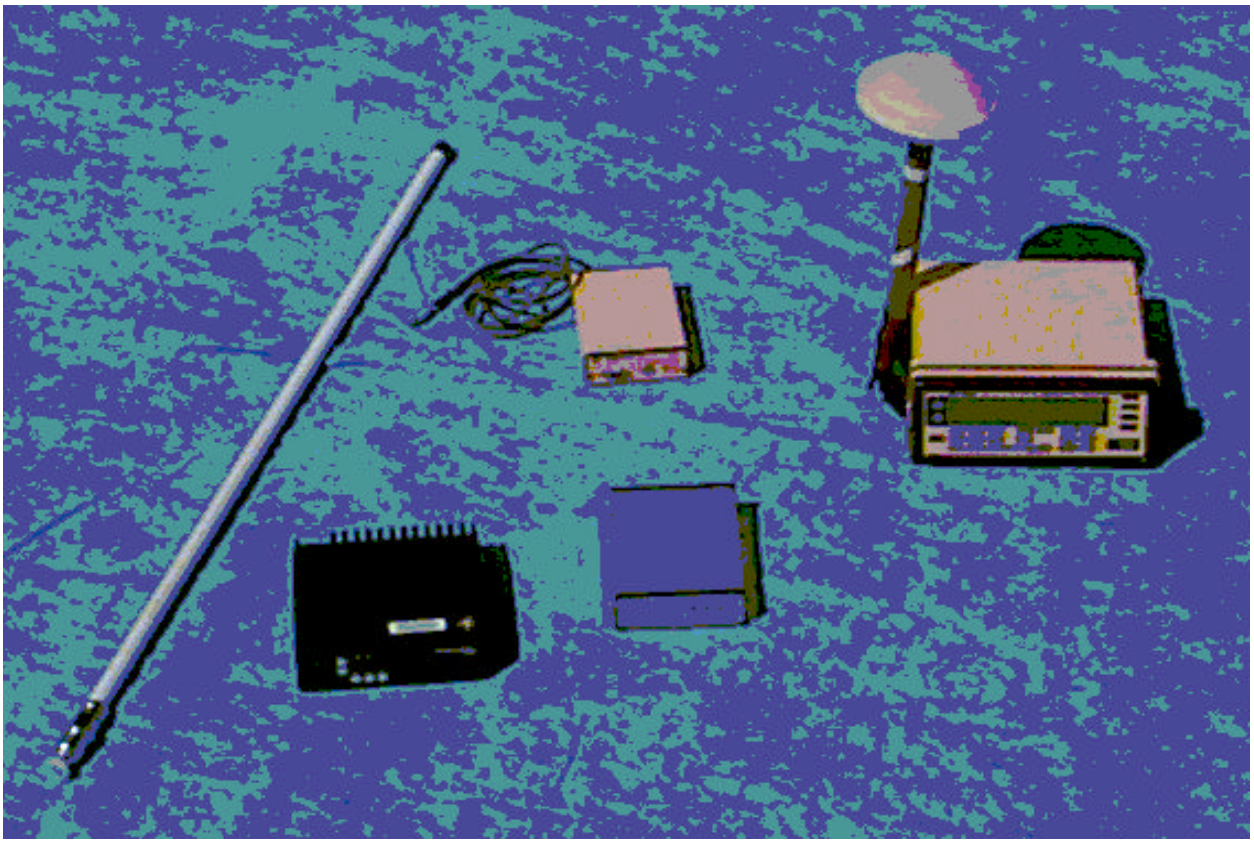
Size: 48 in. X 24 in. X 48 in.
Weight: 460 lbs.

Vacuum Corer

OCEI Catalog # 35 Manufacturer: NFESC

Model: 1712

Size: 48 in. X 24 in. X 48 in.
Weight: 460 lbs.



GLOBAL POSITIONING SYSTEM 4000SST

Manufacturer: Trimble Navigation

Model: 4000SST **CATALOG** 29

Application:

This differential GPS(DGPS) system is used to obtain real time position, velocity and navigation information. The system is compatible with computers, thus it can record all position data, raw measurement data, survey data and navigation data. The accuracy of this system is 1-5 meters. This system can be operated in a static survey mode for high precision applications such as 3-D coordinates, time, normal section azimuth, slope distance and the vertical angle between two survey points. When operating in this mode, it is possible to achieve sub-meter accuracy.

General Description:

The Trimble 4000SST consists of a base station and a receiver station. A base station is set up on a known US Geological Survey benchmark. The station consists of the following equipment: 4000SST, radio with 10 amp power supply, BLCD modem, GPS antenna, VHF antenna and associated cables, power supplies, mounts and adapters.

The base station receives differential corrections from the satellites and transmits these corrections to the receiver station. The receiver station or mobile unit is comprised of the following equipment: 4000SST, radio, MRM modem, GPS antenna, VHF antenna and associated cables, power supplies, mounts and adapters. The receiver station receives the differential corrections and computes corrected position data or navigation data.

General Requirements:

SUPPORT: Anticipate approximately four hours to set up the system. The base station and the receiver station each require 3 Pelican cases of equipment plus batteries. One to two persons may be required to mobilize the system.
OPERATOR: One operator is required. The operator should have a familiarity with GPS navigation systems
TRAINING: If the operator is a novice, a four day training course on Trimble GPS equipment is recommended. However, a half day to one day of training is sufficient for an expert. (Note: once the system is set up and running, very little operator intervention is required).
FIELD MAINTENANCE: Keep all batteries charged. If data is being stored onto either the 4000SST memory or onto the computer, ensure there is always sufficient storage space. It is important to note that when storing data on the 4000SST, if the memory becomes full, the data logging stops.
SPECIAL: VHF radios need a clear line of site to operate. The 4000SST is waterproof but the radios and modems are not waterproof.

Specifications:

This system is transported in approximately 6 cases plus additional cases for power supplies. A back-pack is available to house the receiver station. The accuracy is 1-5 meters. Each station, consisting of the 4000SST, radio, modem, antennas, cables and small batteries, weighs approximately 50 pounds. The equipment from the Trimble 4000SST system can be used and interchanged with the Trimble 4000 RL/DL II. The primary difference between the two systems is there is greater memory or data storage capacity in the 4000SST.

GPS SYSTEM, 198

Manufacturer: Raytheon

Model: Raystar 198 **CATALOG** 30

Application:

Designed to provide accurate positioning and/or navigation aboard any size vessel. Unit is compact, and can be used as a portable or fixed system.

General Description:

The GPS system can be used as a handheld or fixed unit. Optional equipment provided in the kit include: a fixed mounting bracket, a C-MAP card reader, a differential beacon receiver, a remote radiating antenna , and associated cables. The unit requires a 12 volt power source when used in the differential fixed application. The handheld GPS requires 6 AA batteries to provide up to 8 to 10 hours of operation.

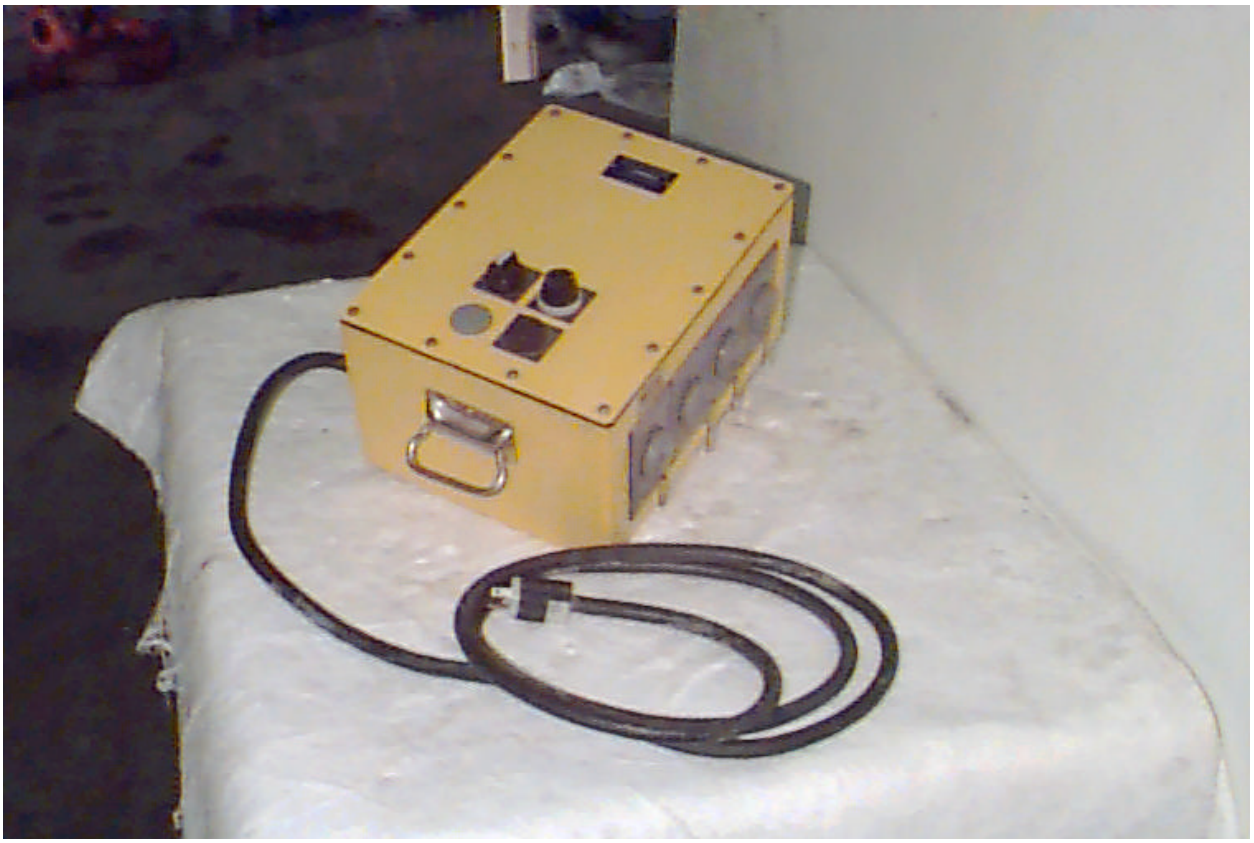
General Requirements:

SUPPORT: 12 volt power source when optional equipment is used with unit.

OPERATOR: One trained person familiar with navigation and electronic equipment can operate the unit.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

DGPS accuracy 2-3 meters.
Shipping container: L36 XW19 XH21
Weight: 40 lbs.



GROUND FAULT DETECTOR

Manufacturer: Naval Civil Engineering Laboratory

Model: 4501-02 **CATALOG** 31

Application:

The Ground Fault Detector was designed to protect divers and electrical equipment operators from electrical shock hazards.

General Description:

The Ground Fault Detector is an electronic ground fault detection and shutdown system, designed to protect electrical equipment operators from electrical shock hazards. The ground fault detector is housed in a splash-proof fiberglass case, featuring an input power cord and four output receptacles.

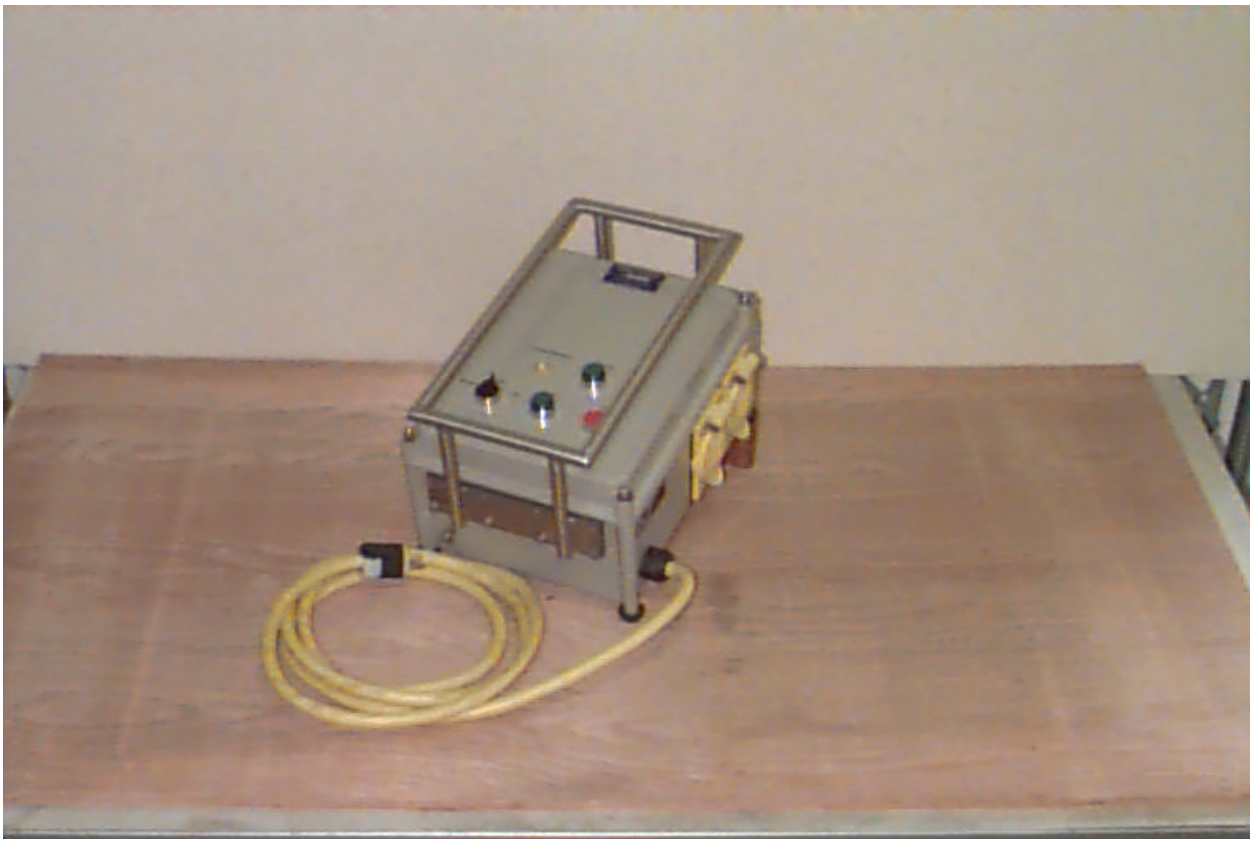
General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One trained person familiar with the operation of electronic test

equipment can operate the unit
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The Ground Fault Detector is designed to interrupt power to a load if one of the following conditions occur: insulation resistance of a load drops below 25,000 ohms, electrical load is 20 amps or greater, or electronic component failure occurs in any of the ground fault detector monitoring circuits.
Performance Specifications:
Voltage Requirement 115 volts AC
Current Rating 20 ampere
Operating Temperature Range 32 to + 70 degrees F
Physical Specifications:
Length 14-3/8 inches.
Width 11 inches.
Height. 8 inches.
Weight. 75 lbs.



GROUND FAULT INTERRUPTER

Manufacturer: Santa Barbara Applied Research

Model: GFI-2.5KW **CATALOG** 32

Application:

The Arctic Ground Fault Detector / interrupter was designed to protect divers and electrical equipment operators from electrical shock hazards.

General Description:

The 2.5 kVA AGFD is an electronic ground fault detection and shutdown system to be used with underwater electrical equipment, such as underwater lights, electrical tools, and fractional electrical motors. The unit can be operated in all climates and will prevent equipment operators from electrical shock hazards caused from damaged electrical equipment. The unit should be used whenever electrical equipment is operated underwater or in other wet conditions.
The unit contains electronic components that monitor the AC power in the load applied to any of the four case mounted power receptacles for breakdowns in insulation resistance. If the insulation resistance drops below a present level, the

AGFD shuts down in 20 milliseconds or less and interrupts electrical power to the load. Test circuits are integrated to verify system functionality.
Certain types of electronic equipment may not operate properly or provide protection to the operator when used with this device. Consult an electronics technician prior to operation of equipment not specifically designed for use with this device.

General Requirements:

SUPPORT: The unit is completely self contained.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Voltage requirement :120 VAC, single phase 60 Hertz
Current Rating :20 amps
Operating Temperature Range: -40 to + 150 degrees F. 90 percent humidity
Packaged in a splash proof case: L15 X W11 X H8 inches.
Weight: 57 lbs.
The AGFD will interrupt power if any one of the following conditions occur:
Insulation resistance of the load drops below 25,000 ohms.
Line AC current supplied by input electrical source to AGFD is equal to or greater than 20 amps.
Electronic component failure occurs in the AGFD monitoring circuits.

Handheld GPS

Manufacturer: Garmin

Model: GPS III Plus **CATALOG** 92

Application:

Designed as a technologically advanced electronic map system for land and sea navigation and chartplotting.

General Description:

A differential-ready, 12 parallel channel receiver continuously tracks and uses up to twelve satellites to compute and update positions. Features include detailed built-in moving maps of North and South American regions and Atlantic regions including lakes, rivers, railroads, coastlines, interstates, plus, national and state highways. The permanently installed basemap has more than 10,000 towns, plus airport locations, secondary roads in metro areas and detailed exit information of the federal interstate highway system including, lodging, food and service stations. Additional cartography may be obtained by plugging the receiver into a PC and downloading data from Garmin's optional MapSource- CD ROM. GPS III features a high-contrast

electroluminescent backlit FTN display, switchable orientation and screen-width scale of 500 feet to 3000 miles.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

GPS lll has a navigation memory capacity of 500 waypoints, 20 reversible routes, 1900 track log points and 106 map datums.
PERFORMANCE
Receiver: Differential-ready PhaseTrac l2
Acquisition Time: Approx. 15 seconds (warm start)
Approx. 45 seconds (EZinit/cold start)
Approx. 5 minutes (AutoLoCate)
Update Rate: 1/second, continuous
Position Accuracy: 1-5 meters (3-15 ft) with DGPS corrections (With optional differential Beacon Receiver Input)
15 meters (49 ft) RMS (Subject to accuracy degradation to 100m 2DRMS under the U.S. DoD-imposed Selective Availability Program).
Velocity Accuracy: 0. I knot RMS steady state
Dynamics: Performs to specification to 6 g's
Interfaces: NMEA 183, RTCM (for DGPS corrections) and RS-232 for PC interface

Antenna: Detachable with standard BNC connector

POWER
Input: Four 1.5-volt AA batteries or 10-32 VDC external
Power Consumption: 0.5 watts max.
Battery Life: Up to 36 hours in Power Saver mode IT
Memory Back Up: Internal Lithium Battery
Measures: 6.15"H x 2"W x 1.23"D (15.6 x 5.1 x 1.23 cm)
Weight: Approx. 9 ounces (255g) w/ batteries

HIGH PRESSURE CLEANING UNIT

Manufacturer: MDMAC

Model: P/M12KDS-N **CATALOG** 49

Application:

The high pressure pump system is a skid mounted, diesel driven, high pressure underwater cleaning unit designed to remove marine growth from underwater structures.

General Description:

The modular package consists of a power module, a hydraulic module, a high pressure module, and a hand held cleaning tool. The power module drives a hydraulic pump which, in turn, drives an intensifier unit that is capable of producing 12,000 psi sea water pressure. The unit has auxiliary hydraulic outlets available to operate hydraulic work tools, at pressures up to 3,000 psi.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: Two persons are capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Water Output: 0 to 5 gpm and 0 to 12,000 psi
Hydraulic Output: 0 to 3,000 psi
L69 XW60 XH47 inches
Weight: 3,900 lbs.

HYDRAULIC POWER UNIT

Manufacturer: NAVSEA DESIGN

Model: Model Two **CATALOG** 33

Application:

Designed to provide hydraulic power to drive a wide variety of hydraulically operated tools and equipment.

General Description:

The hydraulic power unit is a variable volume, self contained assembly in a protective steel frame mounted on a skid . Hydraulic power is supplied by an inline piston type hydraulic pump driven by an air cooled diesel engine. A 30 gallon hydraulic reservoir and radiator type cooler help maintain fluid temperatures at a desirable level. Additional cooling may be required under certain conditions. The unit is shipped with one set of 3/4 inch by 50 foot sections of hydraulic hose with quick-disconnect fittings.

OPERATOR: One person is capable of operating and maintaining the equipment.

TRAINING: A basic mechanical background in equipment operation and maintenance is required.

FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

SUPPORT: The unit is completely self contained.

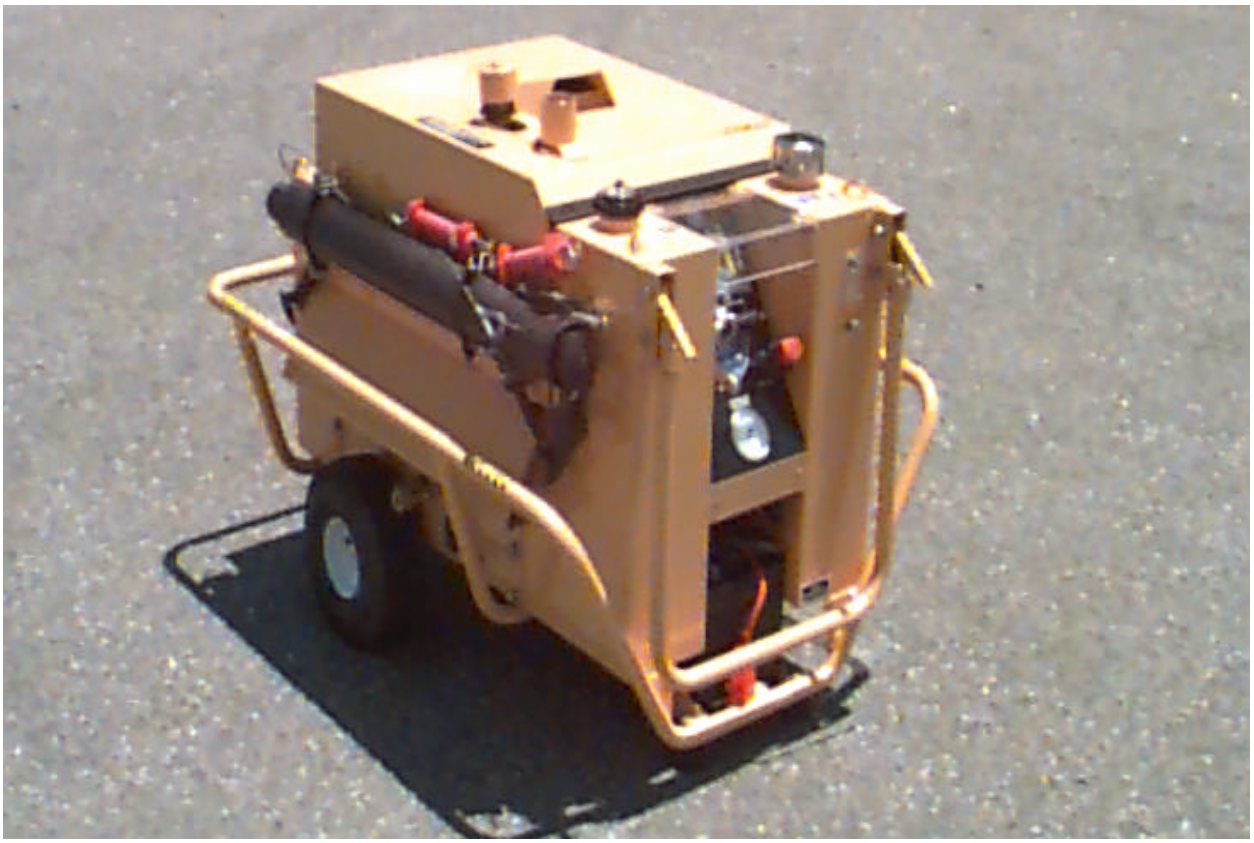
General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic mechanical background in equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.
Hydraulic Hose Recommendations:

GPM	FEET	ID of HOSE
5 to 8	50	1/2 inch
5 to 8	51- 100	5/8 inch
5 to 8	100-300	5/8 inch pressure 3/4 inch return
9 to 12	50	5/8 inch
9 to 12	51-100	5/8 inch pressure 3/4 inch return
9 to 12	100-200	3/4 inch pressure 1 inch return
13 to 16	25	5/8 inch pressure 3/4 inch return
13 to 16	26- 100	3/4 inch pressure 1 inch return

Specifications:

Provides flow from 1 gpm to 15 gpm.
Provides pressures from 150 psi to 2000 psi.
L68 X W23 X H44 INCHES. WEIGHT 1000 LBS.



HYDRAULIC POWER UNIT, PORTABLE

Manufacturer: PortaCo

Model: D-17S10-15-W **CATALOG** 34

Application:

The PortaCo Power Unit is designed to provide hydraulic flow and pressure for operation of H.T.M.A. Type I and II hydraulic tools.

General Description:

The power unit is equipped with an air cooled diesel engine with automatic shut-off. The hydraulic system consists of a hydraulic fluid reservoir, filter assembly, and single pump. The hydraulic pump will produce a minimum of 10 GPM at 2000 PSI.
The pressure hose runs from the pump directly to the control module. The module contains a relief valve, an on/off spool, a cooler bypass spool, and pressure and return ports.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic mechanical background in equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.
Hydraulic Hose Recommendations:

GPM	FEET	ID of HOSE
5 to 8	50	1/2 inch
5 to 8	51- 100	5/8 inch
5 to 8	100-300	5/8 inch pressure 3/4 inch return
9 to 12	50	5/8 inch
9 to 12	51-100	5/8 inch pressure 3/4 inch return
9 to 12	100-200	3/4 inch pressure 1 inch return
13 to 16	25	5/8 inch pressure 3/4 inch return
13 to 16	26- 100	3/4 inch pressure 1 inch return

Specifications:

10 GPM at 2000 PSI
L44 X W30 X H32 inches.
Weight: 450 lbs.

LIFT BAG ASSEMBLY

Manufacturer:

Model: CATALOG 36

Application:

The diver lift system is used to move heavy objects underwater. Bags can lift loads ranging from 220 lbs. to 3000 lbs.

General Description:

The volume of air needed is obtained from SCUBA tanks or a surface air source. Each lift bag has features permitting general buoyancy adjustments and fine trimming capability for maneuvering various loads. The maximum weight to be lifted is adjusted by setting a leak-proof zipper that has been integrated into the side of the bag. The zipper is positioned relative to weight designations that have been printed on the bag. The ascent and descent rates are controlled by the diver. The large bag uses a 6 inch iris diaphragm dump valve. The medium and small bags use a 4 inch iris diaphragm valve. The dump valve is used to control the ascent and decent rate of the bag.

General Requirements:

SUPPORT: The unit requires an outside air source.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Capacity:
Large Bag: 1000 to 3000 lbs.
Medium Bag: 500 to 1250 lbs.
Small Bag: 220 to 550 lbs.

AIR COMPRESSOR cfm

OCEI Catalog # 1 Manufacturer: Sullair Corp.

Model: 375DTQ 2WJD

Delivers up to 375 cfm at 100 psi.

LINEAR CABLE ENGINE

Manufacturer: Caley Ocean Systems

Model: J 1369 **CATALOG** 87

Application:

Caley Ocean Systems, Linear Cable Engines (LCE's) are cable handling systems specially designed to deploy or recover sub-sea cable in a continuous process.

General Description:

One 20 ft. ISO container houses both units. The ISO container has removable side panels for cable access, ease of operation, and maximum operator visibility of the cat tracks. The modules are mounted on a common baseframe to provide tension monitoring and control. Hydraulically operated entrance and exit chutes are provided at the forward end, middle section and aft end of the engine. Two integrated power pack units serve each LCE. Two power unit starter panels with integral instrument consoles are permanently installed on the LCE to control all engine functions . A portable fiber glass control cabin 1.5 meters square x 2.25 meters high is provided to house the master control console.

General Requirements:

SUPPORT: 150 kW, 440 volt, 3 phase electrical power is required.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operations and applications is required. Qualified operators can be provided by the OCSF.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

A single track pair can operate at cable tensions up to 6,000 lbs. depending on the cable type. Combined track pairs can operate at cable tensions up to 8,000 lbs. The maximum running speed of the engine is 450 ft/min. The engine can handle cables typically from 9mm to 50mm in diameter. Cylindrical bodies (repeaters) up to 19 inches in diameter which are concentric with the cable and have suitable tapered end sections can be passed through the engine. As the body passes, the guide chutes and the tracks will open and close while still maintaining contact with the body and cable. Track pairs can be individually selected to open to allow an object to pass without squeeze pressure being applied to the object as it passes.

Generator, diesel 440v 150 kw

OCEI Catalog # 25 Manufacturer: Western Branch Die

Model: 16165

150 kW 260/450 VAC 3 Phase 60 Hz. Provided with a 300 amp control panel and 300 amp trip circuit breaker.

MAGNETOMETER

Manufacturer: Geometrics

Model: G-886 **CATALOG** 90

Application:

Magnetic surveys using a towed fish from a small boat, for purposes such as: locating submerged ferrous objects; mapping locations of submarine pipelines and cables; locating waste materials; locating and mapping shipwrecks.

General Description:

High performance marine magnetometer. Magnetometer operates on the principle of proton precession.

System consists of an onboard electronics console, a tow fish (sensor) and cable, an AC or DC power supply, a GPS navigation package, and a standard laptop computer for data acquistion. The electronics console is watertight, measures 22 in. long by 6.25 in. deep by 4 in. high, weighs 13 lbs, and is equipped with submersible marine connectors. The tow fish (sensor) is 5 in. in diameter, 40 in. long with fin stabilizer

attached, and weighs 20 lbs in air and 5 lbs in water, and must be filled on site with a hydrocarbon fluid. The system is equipped with two tow cables, 200 ft long and 400 ft long. The tow cable is 0.6 in. in diameter and weighs 10 lbs per 100 ft. The cable is non-magnetic and contains a single twisted shielded pair and a Kevlar fiber strain member with a breaking strength of 8000 lbs.

General Requirements:

A small boat, 20 to 30 ft in length, is needed to operate the system. The boat hull must be non-magnetic, such as wood, fiberglass, or aluminum. Required personnel are one boat operator and two magnetometer operators.

Specifications:

Typical short tow cable lengths of 200 feet allow maximum sensitivity and cycle rates of 0.4 nanotesla at twice per second using any source of 22-24 VDC power with 3.5 amp capacity. For longer tow cables of up to 1,200 feet, sensitivity may be 0.2 nanotesla at 2 seconds or longer cycle rate, but in this case, a 115 AC to 32 VDC supply of 4 amp capacity is required.

Stores in one shipping container approximately 3' X 2' X 2', which weighs over 100 lbs and requires more than one person to lift.

MEGOHMMETER

Manufacturer: Freed Transformer

Model: 1620B **CATALOG** 81

Application:

Measures insulation resistance in six overlapping ranges from X1 to X100K megohms.

General Description:

The megohmmeter is a direct reading precision electronic ohmmeter with a variable 250 to 2500 Vdc power supply. Readings are shown on overload protected meters mounted on the front of the unit. The unit requires a power supply capable of 105 to 125 V AC, 50 to 60 Hz and 15 W.

General Requirements:

SUPPORT: Requires a power source capable of 105 to 125 volts AC, 50 to 60 Hz and 15 W.
OPERATOR: One operator who is familiar with the operation and maintenance of

electronic test equipment is required to monitor the unit in operation.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

UNIT SIZE: L11 X W15 X H10 inches.
WEIGHT: 25 lbs.
ACCURACY: +/- 5% on all ranges, +/-2% at full scale
RESISTANACE RANGE: 1 to 200,000 megohms at 250 volts, 10 to 2,000,000 megohms at 2500 volts. (the unit is direct reading at 2500 volts, for all other test voltages, the megohm reading is multiplied by a multiplication factor from .1 to 1 which is indicated on the voltage meter)
TEST VOLTAGES: Continuously variable from 250 to 2500 volts and indicated on a taut band 4.5 inch meter.

METAL DETECTOR, UNDERWATER

Manufacturer: Garrett Metal Detectors, Inc.

Model: XL-500 Sea Hunter **CATALOG** 37

Application:

Designed for use on land as well as underwater to detect metal objects.

General Description:

The XL-500 is leak tested for operation to a depth of 200 ft. Powered by NiCad batteries, the unit is capable of providing 10 hrs of operation on a full charge. The system includes an 8 inch and 13.5 inch coil, waterproof headphones, long and short stems for desired application, and operators manual.

General Requirements:

SUPPORT: Requires 115 volt AC power source for battery charging.
OPERATOR: One operator is required to operate and monitor the system.
TRAINING: The operation and maintenance manual contains the necessary

information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Circuit Type: Pulse induction, automatic cancellation of salt/iron mineralization.
Frequency: 110 pulses per second.
Searchcoil Type: 8-inch pulse coil and 13 1/2" coil .
Depth Capability: Factory-tested and certified to 200 feet (65 meters) or seven atmospheres.
Buoyancy: near neutral.
Batteries: Seven "sub-C" size NiCad rechargeable. It is recommended that operators not attempt to change these batteries.
Circuit (Current) Drain: Operating quiescent at threshold sound (no detection of metal) 100 MA. Operation while detecting large metallic object - 160 MA. Operating life per charge is a approximately 10 hours.
Weight in Air: Control housing 3.8 lbs. (1.7kg)
Headphones 1.4 lbs. (.062kg)
Scubamate 2 lbs. (.9kg)
Sea Hunter with long stem and headphones - 8.1 lbs. (3.9kg)

MINI-ROVER

Manufacturer: Benthos, Inc.

Model: MK II **CATALOG** 38

Application:

Designed to perform underwater inspections and exploration. It is particularly useful in environments unsuitable or unsafe for divers.

General Description:

The ROV is a small, streamlined cable controlled submersible propelled by four thrusters, two in the fore-and-aft plane, one in the vertical and one in the lateral plane which enable the vehicle to cruise at up to 2.9 knots(in zero current), turn on it's own center, and even hover motionless in light currents. It also contains a low-light, high resolution TV camera, two long-life quartz halogen lamps, an internal flux-gate compass, and a depth sensor.
The system console, provides power to the underwater vehicle and the hand controller, manages the RF and video signal traffic, and monitors power demands as well as watertight integrity of the vehicle.

The hand controller is used by the pilot to control the underwater vehicle by way of axis controls and two joysticks.
A color video monitor provides camera display and navigational information from the vehicle.
The standard umbilical cable provides an operating range of 500 feet from system console.
Maximum depth of standard unit is 1000 feet.
max depth 500 feet.

General Requirements:

SUPPORT: Requires 100-120 or 208-240 VAC (+-10%) 50Hz/60Hz power. 800 watts typical, 1000 watts intermittent peak / 7.5 amps (120 VAC).
Generator with 1500 watts minimum capacity recommended.
OPERATOR: Two (pilot and tender).
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

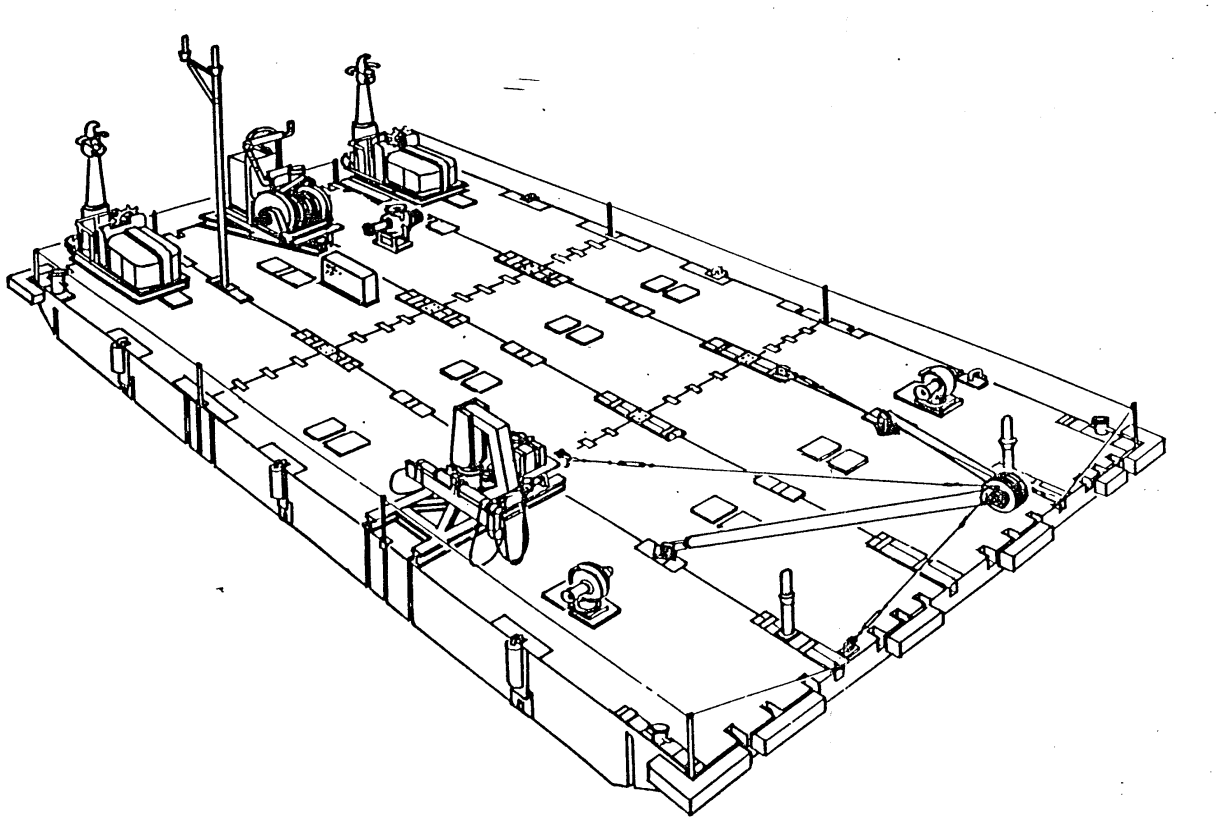
Operational Depth. 0 to 500 feet normal maintenance
0 - 1000 feet increased maintenance
Dimensions:
Length: 30 inches hull only
With skids: 34 inches
Beam: 18.5 inches
Height: 16.5 inches with bail
Speed: 2.9 knots in still water +-.2 knots.
Capable of holding position against a head-on current of 1.5 knot.
Weight in Air: 65-75 lbs. depending on optional equipment
Buoyancy: - ± one lb. in seawater, user-adjustable with trim weights
Trim: Adjustable diver lead weights
Stability: Gravity-stabilized in pitch and roll to +15 degrees, dampened to less than 2 Hz.
Payload: 8-12 lbs. user-adjustable

GENERATOR, YANMAR 5.5 KW (recommended)

OCEI Catalog # 27 Manufacturer: YANMAR

Model: YDG 5500

Provides 120/220 Volt 60 cycle, single phase AC power. Rated output is 45 amperes. Unit also provides DC power for battery charging.



MODULAR CONSTRUCTION PLATFORM

Manufacturer: NCEL

Model: MCP CATALOG 39

Application:

Multipurpose construction platform. Used for construction, cable installations, mooring installations, work platform, or dive platform. Can be modified to fit many applications.

General Description:

Steel pontoons provide the basic flotation structure for the Modular Construction Platform. Pontoons consist of steel boxes 4 feet 7-1/4 inches high by 8 feet wide and 19 feet 10-1/2 inches long. Nine pontoon units are joined together with connectors to form a 60 X 24 foot platform. Twelve pontoons are joined together to form a 60 X 32 foot platform. The bow and stern pontoons are designated NA-F2O R with a raked cross section at one end and a box shape at the other. The center pontoons are designated NA-P20 X X and have a box shape at both ends. All pontoons are equipped with International Standards Organization (ISO) shipping container corner fittings to allow handling with standard container equipment and transport via

commercial container ships.

General Requirements:

SUPPORT: Requires crane service for assembly.
OPERATOR: Depends on type of operation and equipment on board.
TRAINING: Depends on operation.
NOTE: The MCP can be outfitted with a multitude of construction equipment items available from the OCEI.

Specifications:

PLATFORM PONTOONS

Two configurations:	24 ft	32 ft
Weight (approximate)	118,000 pounds	158,000 pounds
Available deck space	1,440 square feet	1,920 square feet
Load capacity	100,000 pounds	135,000 pounds
Tons per inch (TPI) immersion	3.7 TPI	4.9 TPI

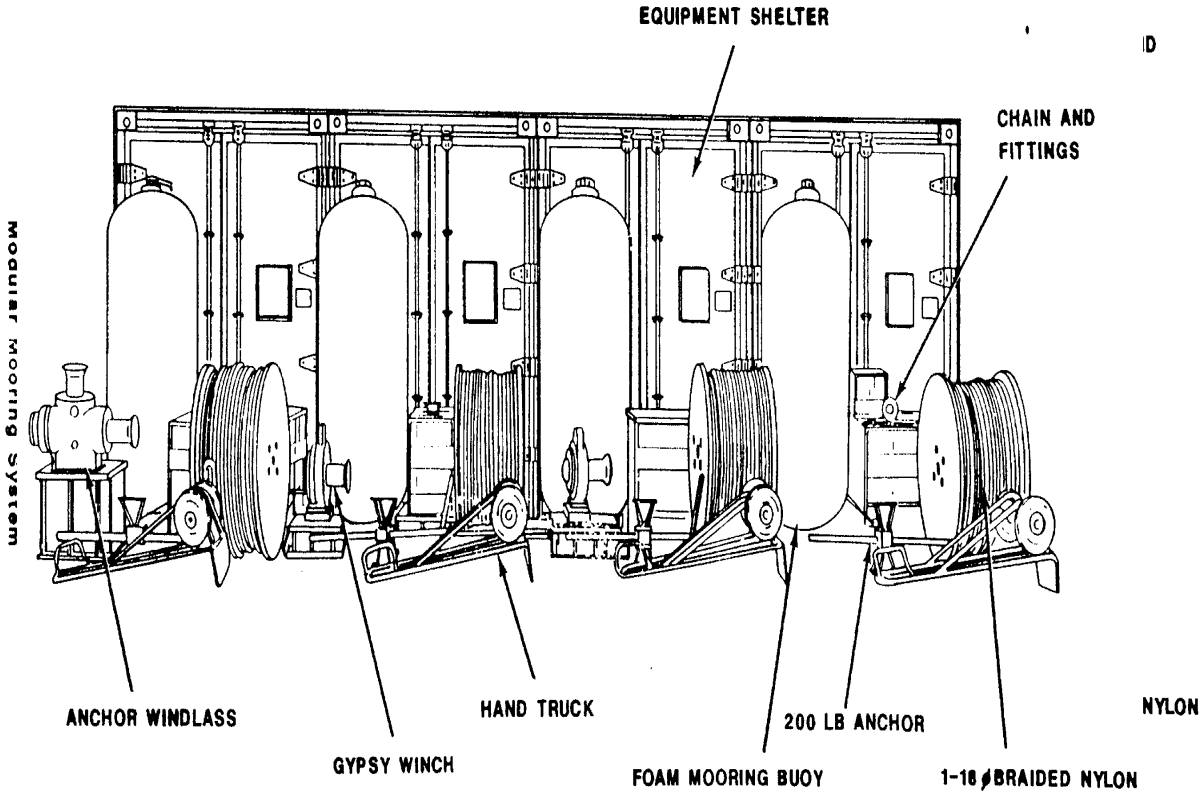
Draft 17 inches

OPERATING ENVIRONMENT FOR BOTH PLATFORMS

Offshore work:
- Moored, survival sea state = 4
- Moored, working sea state = 3
- Underway, survival sea state = 3

Harbor work:
- Moored, working sea state = 2
- Assembly sea state =1

NA-P20 X X, box end: L240" x W96" x H54" 13,000 lbs.
NA-P20 R X, raked end: L240" x W96" x H54" 12,500lbs.
Pontoon-to-pontoon connector: L14" x W4" x H51" 170 lbs. qty 28
Link connector: L14" x W4" x H19" 75 lbs. qty 6
Gaiter plates: L17" x W4" x H5" 14 lbs. qty 9



MODULAR MOORING SYSTEM

Manufacturer: Naval Civil Engineering Laboratory

Model: MMS-I **CATALOG** 40

Application:

Various mooring configurations are detailed below, selection of the most effective configuration is dependent on the project requirements. Single point moor: Minimal positioning capability, large excursion as the vessel aligns with the wind and current and exerts minimum force on the anchor. Normally best for heavy weather or transient mooring. Two point moor: minimal positioning capability. Normally best for transient mooring with limited sea room. Three point moor: Precise positioning capability when the force (wind or current) is along the vessel centerline. Large excursion is possible during shifting winds or currents. Four point moor: Maximum positioning capability with minimum excursion. Best for most situations where wind or current may shift and precise positioning must be maintained.

General Description:

The modular mooring system is a reusable, multi-leg system which is packaged in four standard shipping containers. The system consists of a hydraulic anchor windlass, two hydraulic gypsy winches, four mooring buoys, four anchors, line, chains and fittings. All components necessary for a four point moor on a vessel of the LCU-1610 size are included in the system with single, two or three point configurations being possible using the components based on the requirements of the project. The system is designed to use either all synthetic line or chain/ buoy pendant legs.

General Requirements:

SUPPORT: Hydraulic power is required to operate the gypsy winches and anchor windlass.
OPERATOR: Six persons are required to operate the system.
TRAINING: A basic knowledge of mechanical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The total shipping weight for the four container system is 24,200 lbs. with a volume of 1664 cu. ft.
L96 XW73 XH96 inches
Weight of heaviest container: 6750 lbs.

HYDRAULIC POWER UNIT

OCEI Catalog # 33 Manufacturer: NAVSEA DESIGN

Model: MODEL TWO

Provides flow from 1 gpm to 15 gpm.
Provides pressures from 150 psi to 2000 psi.
L68 X W23 X H44 INCHES. WEIGHT 1000 LBS

MOORING RIGGING LOCKER

Manufacturer: Ocean Construction Support Facility

Model: **CATALOG** 41

Application:

Designed to support rigging and mooring operations.

General Description:

The steel rigging box contains the basic equipment required to support small mooring installations. Additional items may be added to support larger projects.
LIST OF EQUIPMENT:
PIN HAMMER 1 inch 16 inch handle
PIN HAMMER 3/4 inch
PIN HAMMER 5/8 inch
PIN HAMMER 1/2 inch 30 inch handle
PIN HAMMER 5/8 inch
PIN HAMMER 1/2 inch

DRIFT PINS
SHACKLE 3/4 INCH SCREW PIN (4 3/4 TON)
SHACKLE 7/8 INCH SCREW PIN (6 1/2 TON)
SHACKLE 1 INCH SCREW PIN (8 1/2 TON)
SHACKLE 1 3/4 INCH SAFETY (40 TON)
SHACKLE 1 1/2 INCH SAFETY (30 TON)
SHACKLE 2 INCH SAFETY (50 TON)
SNATCH BLOCK (12 TON)
SNATCH BLOCK (20 TON)
SLINGS
CHOKER SLINGS
LOAD BINDERS
CHAIN SLINGS
AIRCRAFT TIEDOWN ASSY
MANILA ROPE
POLYPROPYLENE LINE
POLYESTER ROPE
CABLE PULLERS
TENSIOMETER 50,000 LB
PELICAN HOOK CHAIN STOPPERS
LEAD BAR STOCK
CHAIN HOOKS
KEVLAR CABLE STOPPERS

General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic background in equipment rigging operations is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Steel container:
5040: L67 X W84 X H80 inches.
Weight: 5650 lbs.
5041: L72 X W72 X H87 inches.
Weight: 6500 lbs.

MOORING SYSTEM, PORTABLE

Manufacturer: OCSF

Model: CATALOG 42

Application:

Designed as a lightweight portable mooring system.

General Description:

The system consists of two light weight portable gypsy winches with individual control consoles. The gypsy winches are designed to allow horizontal or vertical mounting to accommodate a variety of mooring applications.

General Requirements:

SUPPORT: Hydraulic power is required to operate the gypsy winches.
OPERATOR: Three to six persons may be required to operate the system dependent upon type of operation being undertaken.
TRAINING: A basic knowledge of mechanical equipment operations and applications

is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

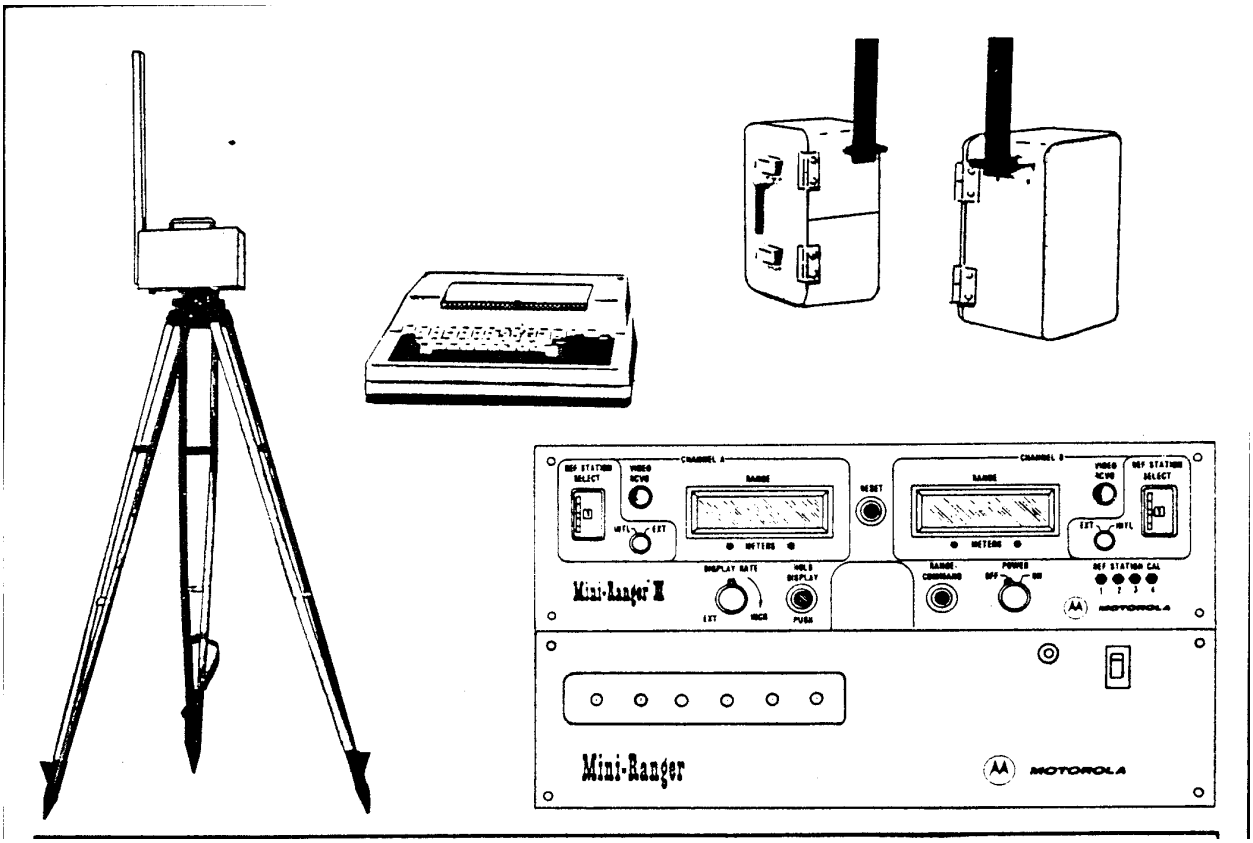
Capstans pull 5000 lbs. at 87 fpm.
Shipping container: wooden crate
L48 X W48 X H32 inches
1500 lbs.

HYDRAULIC POWER UNIT

OCEI Catalog # 33 Manufacturer: NAVSEA DESIGN

Model: MODEL TWO

Provides flow from 1 gpm to 15 gpm.
Provides pressures from 150 psi to 2000 psi.
L68 X W23 X H44 INCHES. WEIGHT 1000 LBS.



NAVIGATION SYSTEM, MINI RANGER

Manufacturer: MOTOROLA, INC.

Model: MINI RANGER SYSTEM III AND IV **CATALOG** 86

Application:

Designed to operate on the principle of pulse radar to provide a means of accurately determining the position of a moving target, such as an aircraft, vessel or land vehicle.

General Description:

The Mini Ranger III system consists of a receiver transmitter assembly with antenna, a range console, and two radar transponders with antennas. The Mini Ranger IV system consists of a receiver transmitter assembly with antenna, a range processor, a control display unit, and two radar transponders with antennas. The Mini Ranger is mounted on the moving craft and used to interrogate the two transponders which are located at fixed reference points. The lapsed time between the transmitted interrogation signal and each of the two reply signals is used to determine the range to each transponder. This range information is displayed on the range console and shows range in meters to each of the transponders or, if the optional data processor is used, the location can

be displayed in x - y coordinates. The Mini Ranger IV can display location as either range-range, or as X - Y coordinates.

General Requirements:

SUPPORT: The basic Mini Ranger III System requires 24 volt DC power for operation of the range consoles. The Mini Ranger III systems, with the optional data processor, requires 115 volt 50 - 400 Hz AC power at 300 watts for operation and an operational 24 volt DC backup for data retention in case of an AC power failure. The Mini Ranger IV can operate either from 24 volts DC or from 115 volts AC 50-400 Hz at 150 watts. Each transponder requires 24 volts DC at 2 amps.
ANCILLARY EQUIPMENT: A printer, remote range indicator, analog track indicator, plotter, recorder, video display terminal and tripods for the reference stations are available as accessories.
OPERATOR: One trained person familiar with the operation of electronic equipment can operate the unit.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Performance Description:
With the proper transponder elevation, the Mini Ranger III and IV systems will operate at line of sight ranges up to 20 nautical miles. The probable range measurement accuracy is better than three meters. A coding system is employed in the system to minimize false range readings caused by radar interference and to provide selective transponder interrogation.
Performance Specifications:
Approximate battery life for two standard 12 volt batteries:
When used w/transponder is approximately. 20 hours.
When used w/range console is approximately. 12 hours
Mini Ranger III System:
Basic System:
0perating speed up to 30 positions per minute - adjustable
Operator interface LED readout
Outputs range - range
With Data Processor:
Operating speed up to 30 positions per minute
Operator interface keyboard/printer
Outputs range - range and X - Y coordinates
Mini Ranger IV System:
Range Processor:
Operating Speed up to 30 positions per minute
Operator interface 16 position keyboard and
CDU
Outputs range - range and X - Y coordinates

Control Display Unit:
Display 5 inch CRT, red phosphor
Receiver/transmitters and reference stations:
Range 20 mile
Probable range error, MRS III 4--3 meters
MRS IV 2 meters

NUT SPLITTER (Manual)

Manufacturer: Naval Civil Engineering Laboratory

Model: **CATALOG** 44

Application:

Tool can be used in both surface and underwater applications.

General Description:

The manual nut splitter is designed for removing damaged or galled stainless nuts from split pipe and other structures. It can also be used on smaller nuts made of softer materials. The tool can be operated manually using a socket or torque wrench, breaker bar or with an impact wrench. The tool is operated by forcing wedge shaped cutters into opposite flats of a nut and breaking the nut. The unit is shipped in a tool kit with spare parts, and lubricant.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual

Specifications:

Packed in a container L17X W10 XH9 inches
Weight: 45 lbs.

NUT SPLITTER, HYDRAULIC

Manufacturer: Naval Civil Engineering Laboratory

Model: 1780 PQ **CATALOG** 43

Application:

The tool is designed to split mild steel nuts up to 1 7/8 inches across the flats (nominal 1 1/4 inch bolt size). It is used by positioning the cutter jaws on opposite flats of the nut. Hydraulic pressure to split the nut is supplied by the hand pump through the spring return cylinder. This action causes the jaws to deform and split the nut. The unit can be used underwater.

General Description:

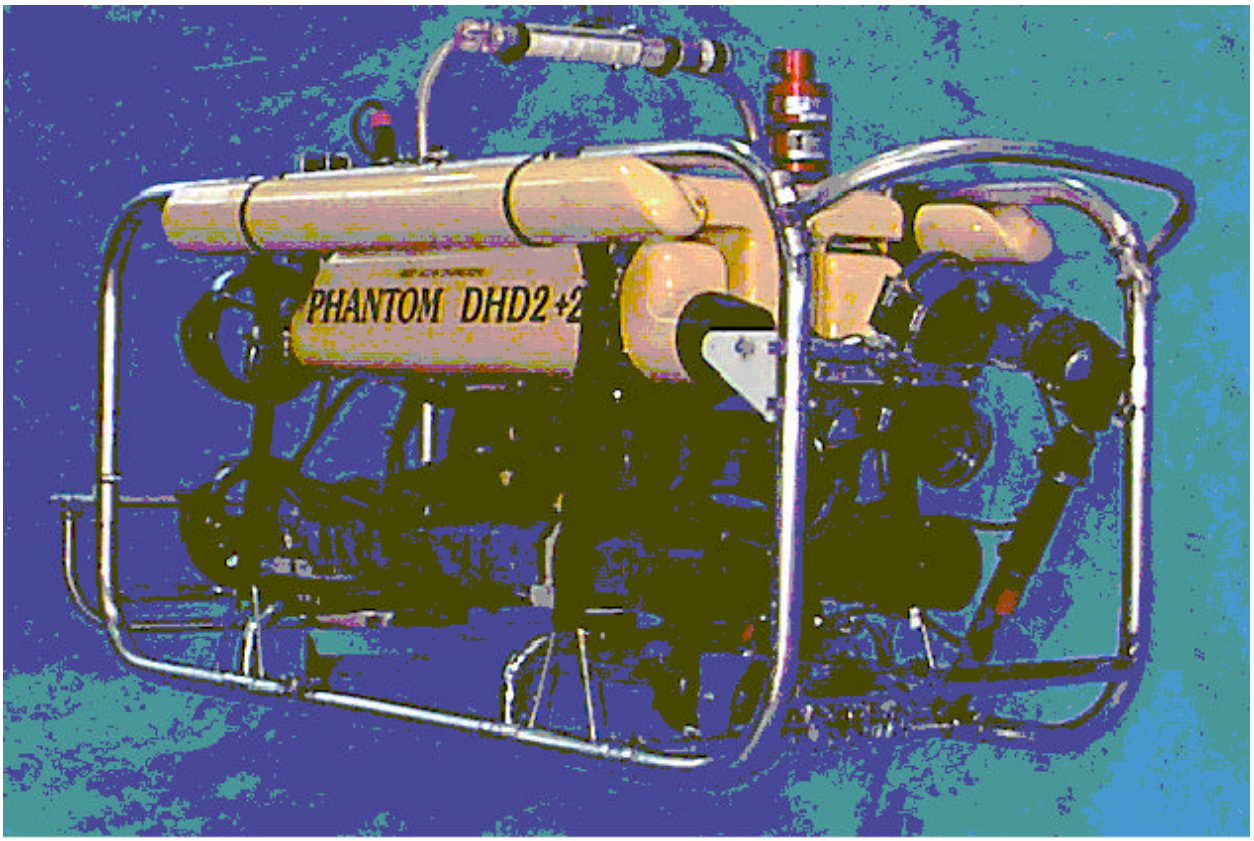
The hydraulic nut splitter is designed to remove damaged, galled, or rusted nuts. The nut splitter assembly consists of the cutter head assembly with two opposing jaws, a hydraulic hand pump which is capable of 8,000 psi pressure, and a spring return cylinder to transmit the hydraulic energy to the cutting jaws. The unit is completely self contained.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment. However, assistance is required to operate the hand hydraulic pump.
TRAINING: A thorough knowledge of mechanical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual. After use in salt water, the unit must be rinsed with fresh water.

Specifications:

L32 XW29 XH21 inches.
Weight: 185 lbs.



PHANTOM ROV

Manufacturer: Deep Ocean Engineering (DOE)

Model: DHD2+2 **CATALOG** 0

Application:

A remotely-operated vehicle that can be used to support inspections, surveys and light work tasks underwater for 1-24 hrs.

General Description:

It provides deep and long duration dive capabilities in hazardous water conditions, including the Arctic, with minimal risk to personnel. A ROV can also supplement manned diving operations by performing support task before, during and after the divers are deployed. Overall, ROV operations require less personnel and support equipment than do manned diving operations. Standard operations utilize a color camera, three lights and a three function manipulator for grasping objects.

General Requirements:

SUPPORT: Shelter for operations, small crane or davit for deployment of ROV, and sub-surface navigation (usually) is required.
OPERATOR: An operator, navigator and an umbilical handler are required for safe and proper operations.
TRAINING: ROV's are complicated systems which require technical decision making and troubleshooting during setup and use. Ideally, ROV operations should be performed by trained and experienced operators.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.
SPECIAL: Additional equipment available for ROV operations include sonar, 35 mm camera and strobe, cable tracking, black and white low light camera, small color camera, subsurface navigation, CTD (conductivity, temperature and depth), cable cutter, underwater strobe, and complete spares backup for quick repair. The Phantom is capable of having two cameras on the vehicle at one time. Cameras and lights are mounted on a 360 degree tilt bar. A support van with complete operating capabilities provides seating for three people, 2 each Hi8mm VCR's, 1 each commercial VHS VTR, air conditioning, 3 instrument racks, red light operations, refrigerator, VHF radio, 486 computer, and cellular telephone with modem. An overboarding "A" frame supplies light and supports the winch. Integrated navigation is available with dual fluxgate compass', GPS (P code), DGPS (USCG), depth sounder, and split screen computer for data and navigation including remote monitor.

Specifications:

Size of ROV and container: 34 in. X 86 in. X 48 in.
Size of ROV: 66 in. X 27 in. X 30 in.
Weigh of ROV and container: 600 lbs.
Weight of ROV: 350 lbs.
Power requirements: 4.5 KW generator (40 amps +), 110 V AC
Forward thrust: 200 lbs.
Pressure tested to 2500 ft., 550 W of light (3 light fixtures).
Console size: 15 in. X 30 in. X 22 in.
Console weight: 103 lbs.
Hydrophone size: 12 In. X 12 in. X 32 in.
Hydrophone weight: 90 lbs.
Length of cable: 200 ft.
Responder control rack size: 19 in. X 10 in. 2 in.
Responder control rack weight: 10 lbs.

Van

OCEI Catalog # Manufacturer: NFESC

Model: N/A

Size: 101 in. X 83 in. X 111 in.
Weight: 6000 lbs.
Power requirements: 60 amps, 220 V AC, 1 ph.

"A" Frame

OCEI Catalog # 0 Manufacturer: NFESC

Model: N/A

Size: 143 in. X 96 in. X 124 in.
Power requirements: 60 amps, 220 V AC, 3 ph.

Camera

OCEI Catalog # Manufacturer: Osprey

Model: 1371

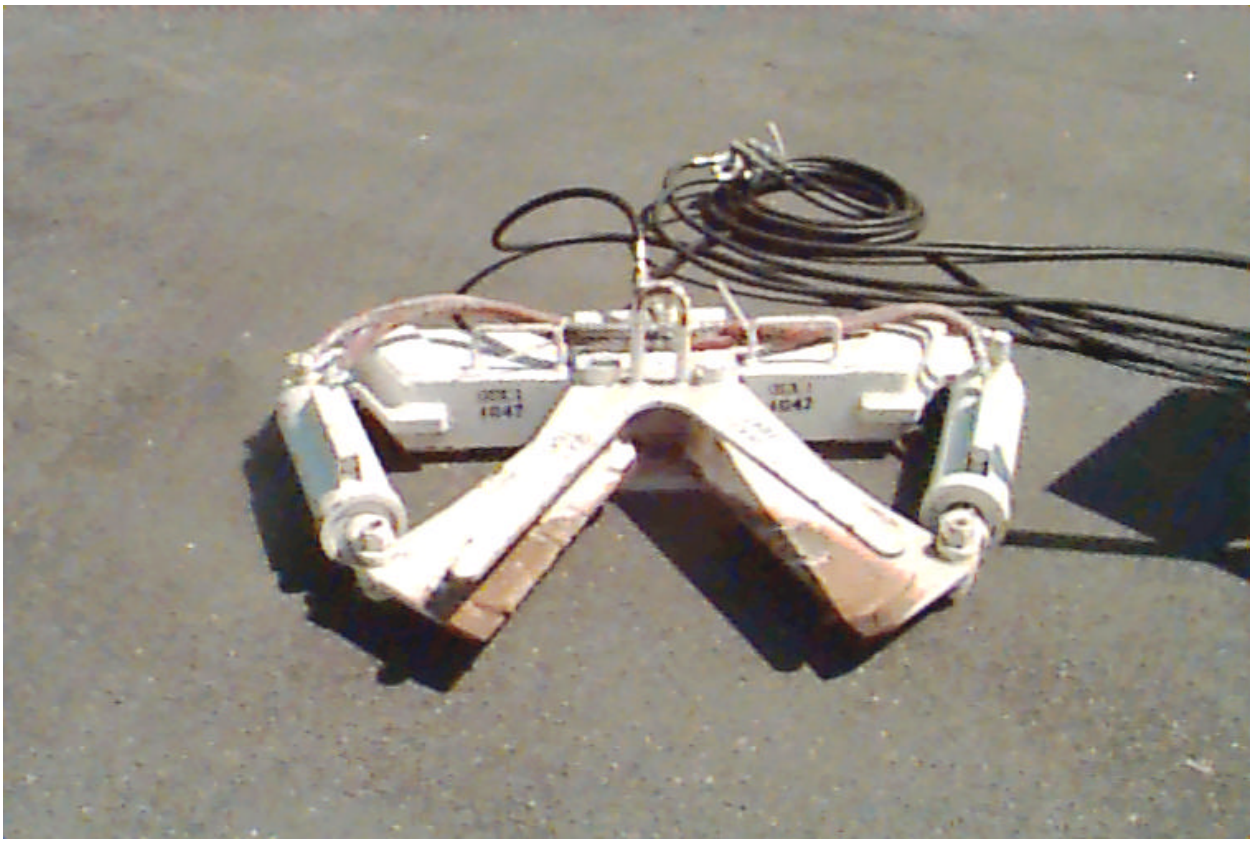
Size: 4 in. dia. X 11 in.
Weight (air): 5 lbs
Power requirements: 16-24 V DC, 400mA, 0.5 lux
Resolution: >280 lines
Depth: 1000 m.

Winfrog

OCEI Catalog # 0 Manufacturer: Pelagos Inc.

Model: Windows 3.1

Integrated navigation system.
Computer requirements: Run on a 486 onboard computer
Inputs: Compass, GPS, depth, ROV depth and heading, and subsurface navigation



PILE CUTTER

Manufacturer: Naval Civil Engineering Laboratory

Model: **CATALOG** 45

Application:

The pile cutter is designed to cut through a timber piling up to a maximum of 13 inches in diameter, in less than one minute. A floatation buoy is required to compensate for the pile cutter weight. Buoy should adjust weight to 30 lbs. negative in sea water. The cutter and lift buoy can be operated in water depths of up to 120 feet.

General Description:

The pile cutter was designed to allow divers to efficiently cut timbers at the mudline during repairs and maintenance of waterfront facilities. The unit is a hydraulically powered linear shear equipped with an open centered, spring loaded shutoff control valve. Cutting force is provided by two 5 inch bore hydraulic cylinders.

General Requirements:

SUPPORT: Hydraulic power source capable of producing 2000 psi at 15 gpm.
OPERATOR: Two divers trained in the operation, with special emphasis on the safety of operating underwater mechanical equipment.
TRAINING: Special training and certification on the operation of the cutter is required. U.S. Navy Underwater Construction Teams normally posses the required training.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

L25 XW25 XH10 inches
Weight: 85 lbs.

HYDRAULIC POWER UNIT

OCEI Catalog # 33 Manufacturer: NAVSEA DESIGN

Model: MODEL TWO

Provides flow from 1 gpm to 15 gpm.
Provides pressures from 150 psi to 2000 psi.
L68 X W23 X H44 INCHES. WEIGHT 1000 LBS.

PRECISION LIGHTWEIGHT GPS RECEIVER (PLGR)

Manufacturer: Rockwell

Model: **CATALOG** 0

Application:

The Precision Lightweight GPS Receiver (PLGR) is a handheld battery-operated GPS receiver that provides more precise location information worldwide than commercial GPS receivers usually can. Accuracy is 6 - 10 meters.

General Description:

The Precision Lightweight GPS Receiver (PLGR) is a small, handheld, Global Positioning System (GPS). It provides precise positioning from GPS satellites. It is a five channel receiver, capable of Precision Code (P Code) and Y Code (encrypted P Code) reception. Positioning solutions can be displayed in latitude, longitude, military grid reference system, Universal Transverse Mercator, British National Grid and Irish Transverse Mercator Grid coordinates. It has the capacity to log up to 49 map datums, and can be programmed to support navigation. Once the code timeexpires it must then be re-encrypted. The unit connects to a computer for use with software

applications such as those in the Bathymetric Survey System (OCEI Catalog # 6).

General Requirements:

Specifications:

Position units available: L/L dm, L/L dms, UTM, Military Grid and others.
Many DATUM available, be aware of waypoints datum, default WGD WGS84.
Remote antenna
8-32VDC external power accepted
NEMA-0183 output
Linear units: metric, English, Nautical
All time zones via ZULU + or -
Magnetic variation encoded for the entire world for 5 years from of date of manufacture.
Power batteries (8 ea. AA, 1.5VDC) can be: alkaline, lithium or ni-cad....DON'T MIX
Memory battery: 3.6VDC lithium AA size (KEEP SPARE WITH UNIT)
Updates every second
Best accuracy listed is +/- 10m, best tested accuracy 6 meters
4 modes of basic operation: fix, continuous, average, and standby
Way point (WP) and Navigation modes are complete and easily mastered
Power battery life monitored via installed averaging formula, roughly 8 hrs with alkaline
Waterproof to 3 feet (bottom of Zodiac) with port covers in place
Vehicle mounting frame comes with unit.
Length: 9.5 in.
Width: 6 in.
Thickness: 2.5 in.
Weight: 3 lbs.

PULSERANGER SYSTEM

Manufacturer: Keuffel and Esser Company

Model: 760380 **CATALOG** 48

Application:

The pulseranger system is a light, compact, hand-held or theodolite-mountable electronic distance measuring instrument with true tracking capability.

General Description:

The unit uses a pulse-modulated solid state laser diode as its light source. A sighting telescope is mounted atop the unit for visual acquisition and tracking of targets. Measurements in either meters or feet are indicated on a 6 digit florescent numerical display. Depending on the atmospheric conditions and the number of prisms used, range measurements up to 1.86 miles are possible with this unit. The pulseranger is shipped with an accessory kit containing mounting hardware, batteries, cables and a battery charger. Accessory items available on request include the prism, three prism clusters and the tripod (Tribach).

General Requirements:

SUPPORT: The unit is supplied with a rechargeable Ni-Cad battery and battery charger which requires 115V AC 60 Hz power.
OPERATOR: One trained operator and one spotter are required to operate the system.
TRAINING: One day of field training is normally sufficient to establish an adequate understanding of the operation and maintenance of the equipment.
FIELD MAINTENANCE: Minor field adjustment will be performed IAW OCEI instructions and the Keuffel and Esser operating manual. Maintenance records, operating logs and equipment history cards must be maintained.

Specifications:

Range: 328 ft. (100 meter) in passive mode 1.86 miles (3 Km.) in triple prism target
Display update: Variable from 2/sec. to 1/sec.
Accuracy: 1 ft. (30 cm.) plus 0.015% of the distance
Size: 11 in. X 8 in. X 6 in.
Weight: 8 lbs.

PUMP, JETTING

Manufacturer: Peerless Pump Company

Model: F4-1440P **CATALOG** 50

Application:

The system is rated at 175 psi at a pumped liquid temperature from 20 degrees to 150 degrees. The rating changes to 165 psi when the temperature of the liquid is between 150 degrees and the maximum temperature of 200 degrees.

General Description:

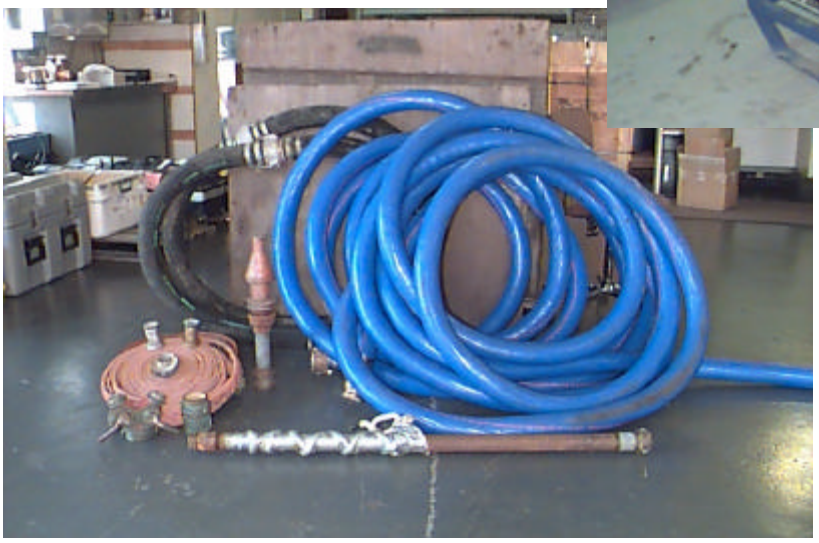
The peerless pumping system is a self contained, skid mounted unit. It is designed to pump large quantities of water only (gpm should be in excess of 1000 gpm) and not for hydrocarbons, or materials which are corrosive or abrasive. It is powered by a Cummins 116 hp diesel engine. A control console is fitted to the unit which contains all instruments used in operating and monitoring the engine and pump including pump pressure and vacuum, engine warning lights indicating over-speed, water temperature, lube oil pressure gages, as well as engine throttle and stop controls. The pump assembly is fitted with a 6 inch suction and a 4 inch discharge fitting.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A knowledge of mechanical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

L120 XW48 XH48 inches
Weight: 3500 lbs.



PUMP, JETTING 250 GPM

Manufacturer: Thompson Pump & Mfg. Co. Inc.

Model: 3J - DLW - 4 **CATALOG** 51

Application:

Designed as a light weight jetting system. Applications include pile jetting, split pipe/ cable laying, washdown, seawall construction, etc.

General Description:

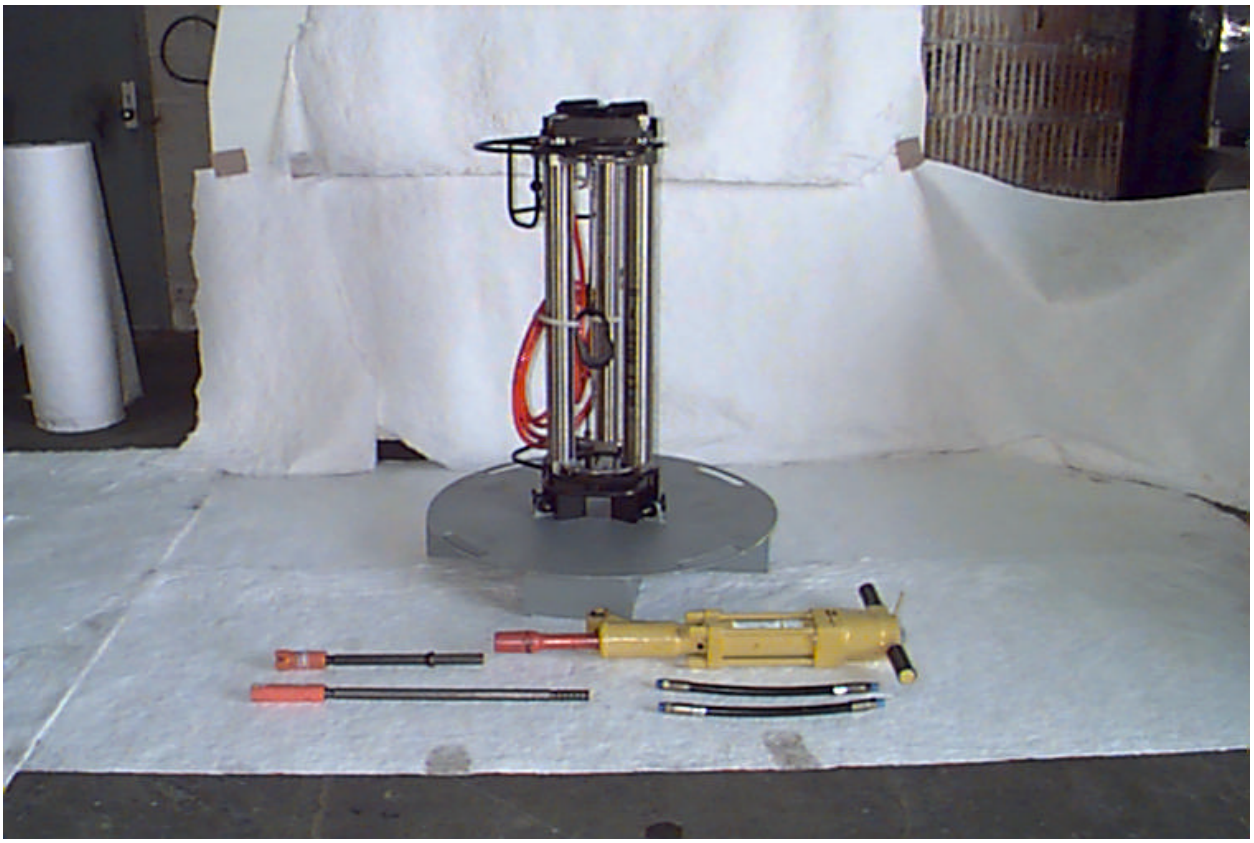
The portable jetting pump is powered by a four cylinder water cooled diesel engine with electric start. The unit is mounted in a roll cage frame with soft tired wheels and retractable lifting handles for portability. Portable fuel tanks are provided as the primary fuel system. The pump has a three inch suction with strainer. Discharge is three inches, reduced to two and one half inches. Further reduction can be accomplished using adapters and fittings supplied with the jetting kit. Easy priming high volume diaphragm type hand primer is built into pump system.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Produces up to 250 GPM at 110 PSI
L60 X W46 X H38 inches.
Weight: 740 lbs.



RAPID PENETRATION TEST KIT

Manufacturer: NFESC

Model: CATALOG 55

Application:

Designed for diver use to expediently evaluate the geotechnical properties of a soil profile to the depths required for most foundation support purposes. It is used to identify soil type and predicted pile load capacity during the test itself, thereby negating the need for further soil testing or analysis for expeditionary facilities such as the Amphibious Battalions' standard and modular Elevated Causeway systems. Although developed specifically for use by Navy divers in the nearshore environment, this test could be adapted to terrestrial applications. However, the correlation between test results and predicted soil performance provided herein was developed specifically for marine and other submerged soil conditions. Therefore, the soil identification and evaluation may require modification for those applications in which soils are located above the water table.

General Description:

The RPT kit includes a Stanley underwater model BR 67 breaker to drive drill steel into the seafloor, an extraction tool to remove the drill steel from the sea floor, and required tools. The BR 67 breaker is a standard hydraulic breaker modified for underwater use. The breaker is open centered and has a 1 1/4 inch hex shank. The extraction tool consists of two major components, an aluminum baseplate and three 27-inch stroke hydraulic cylinders. About 300 ft of drill steel , in 2-ft sections with unions (Brunner and Lay # K1024AA) is included with the kits. Four systems are available from the OCEI. Spares and additional drill steel are inventoried at the OCEI.

General Requirements:

SUPPORT: Hydraulic power unit 8 gpm at 2000 psi required
OPERATOR: Diver operated equipment .
TRAINING: Diver operated equipment requires special training. A thorough knowledge of mechanical equipment operation and maintenance is required.
The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The RPT can be used in typical soil profiles to depths of 30 to 50 ft in firm materials such as dense sands and to several times this depth, if required, in weaker soils. At the present time there are no RPT data available on coral, boulders, or heavily glaciated soils. The soil classification aspect of the RPT is based on homogeneous soil profiles.
Shipping: Wooden box L48 in. x W40 in. x H43 in.; Wt. 800 lbs
A hydraulic power source, such as one of the following, is required to operate the kit:

HYDRAULIC POWER UNIT, PORTABLE
OCEI Catalog #: 34 Manufacturer: PortaCo
Model: 10 GPM at 2000 PSI

HYDRAULIC POWER UNIT, MOD TWO
OCEI Catalog #: 33 Manufacturer: NAVSEA DESIGN
Model: MODEL TWO
Provides flow from 1 gpm to 15 gpm.
Provides pressures from 150 psi to 2000 psi.
L68 X W23 X H44 in. Weight 1000 lbs

SIDE SCAN SONAR

Manufacturer: MARINE SONIC TECHNOLOGY

Model: **CATALOG** 88

Application:

The side scan sonar system is used to survey and map the seafloor in water depths of 10 to 190 feet. Example applications include mapping rock-free cable and pipeline routes, locating surface-layed cables, certifying amphibious operating areas as clear of obstacles, or locating obstructions for eventual removal.

General Description:

The system contains a computer, a 300-KHz towfish, a 600-kHz towfish, and other equipment needed to provide a real time display of the seafloor's micro relief. Position information is provided by external GPS OCEI systems such as the BSS system, the military PLGR receivers, and the RayStar units. Note: One of the side scan sonars contains a 1200-KHz towfish in place of the 300-KHz towfish, and is more appropriate for very shallow water applications; however, it has a very limited range.

Operation and setup of the the system is computer controlled with windows-based software. Internal data storage capability is adequate for up to 24 hours of continuous operation. Seafloor images may be zoomed and enhanced. Images are correlated with fairly precise geographic position.

The system is ruggedized to withstand small boat handling and handling on decks of Navy vessels. It is splash proof and operable in a heavy sea spray.

System components weigh less than 60 lbs each and are man-deployable from small boats. Over-the-side deployable components (tow fish) are less than 50 lbs. in air weight. A small man-handleable electric winch is available for use when deploying the fish on the long cable at full depth range.

General Requirements:

A small boat is needed to operate the system. Required personnel are one boat operator and one or two side scan sonar operators.
SUPPORT: The unit is completely self contained. One 12 vdc (automotive or Gel Cell) battery is required to power system. Battery should be free standing since interferring signals could be picked up by the system from other items connected to the battery.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A knowledge of electrical equipment and computer operations and applications is required. Two days of training, or prior experience, are required. Interpretation of results requires an additional day of training or prior experience.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

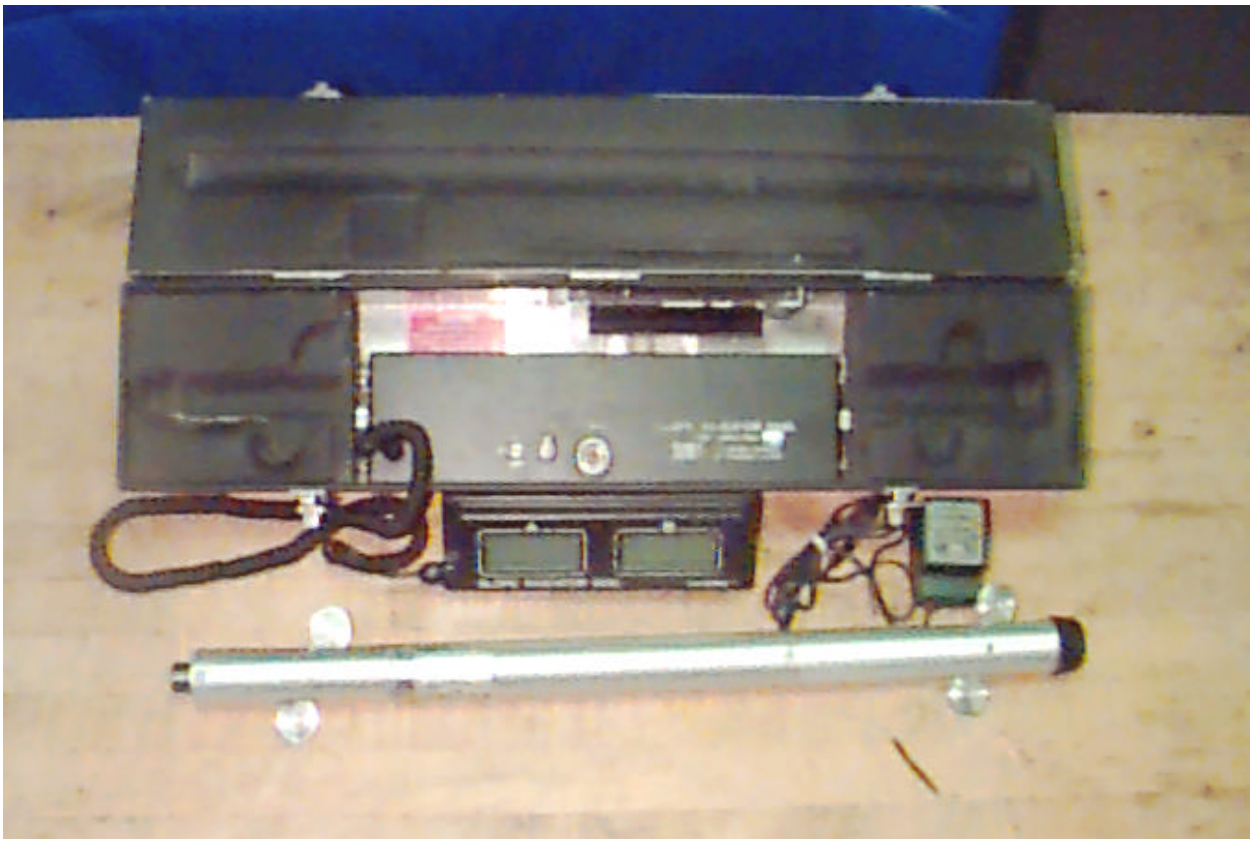
Specifications:

The side scan sonar system contains:
Splash proof PC computer
Single-frequency 300 kHz towfish (The newest, third system will substitute 1200 kHz.)
Single-frequency 6OOkHz towfish
Two 200-meter-long tow cables.
Two 100-meter-long tow cables
Two 30-meter-long tow cables
(Towfish cables are interchangeable.)
Hardigg Shipping Containers
External 100 MB Zip storage drive (for use on dry land only).
Towfish keel weight
12 VDC Winch
External waterproof video port for external monitor
Internal Coast Guard Beacon receiver Differential Global Positioning System (CGBDGPS)

SHIPPING:

The system comes in the following customized Hardigg shipping containers that must be used when transporting the system.
Case A: (3OOkHz tow fish) L54 XW15 XH15 inches
WT.60 lbs.
Case B: (6OOkHz tow fish) L54 XW15 XH15 inches
WT.60 lbs.
Case C: (tow cables and depresser weights) L24 XW26 XH19 inches
WT. 60 lbs.
Case D: (Topside PC unit) L25 XW19 XH19 inches
WT. 40 lbs.
Case E: (spares and additional cables) L24 XW26 XH19 inches
WT. 50 lbs

The available small winch is packaged separately.



SLOPE INDICATOR 1000

Manufacturer: Slope Indicator Co.

Model: 50377 & 50376 **CATALOG** 79

Application:

Determines the direction and angle of a shaft or well up to 45 degrees in all directions.

General Description:

The slope indicator is a battery powered instrument. It consists of a control panel with a LCD readout connected to a sensor through 250 feet of cable. To operate, the sensor is lowered into the shaft and the readout on the console indicates the angle difference from straight vertical as well as direction of the slope.

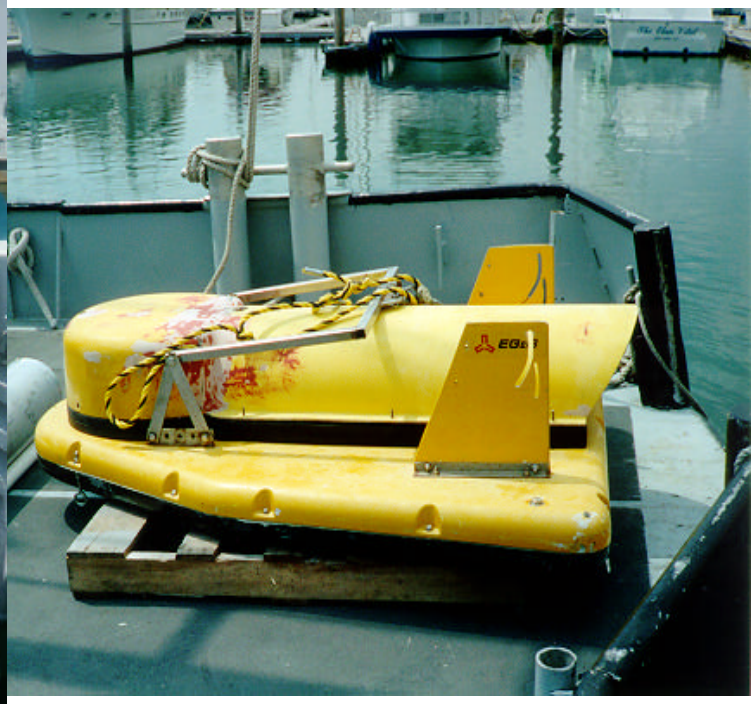
General Requirements:

SUPPORT: A battery charger supplied with the indicator requires 115 volt AC power.
OPERATOR: One person trained in the operation and maintenance of the equipment is required.

TRAINING: One day of training in field is required after familiarization with the technical manuals.
FIELD MAINTENANCE: Field maintenance will be performed IAW OCEI instructions and the Slope Indicator Company service manual. Maintenance records, operating logs, and equipment history cards must be maintained.

Specifications:

Probe size: 30 in. X 5 in. X 4 in.
Probe weight: 30 lbs.
Cable size: 24 in. X 24 in. X 6 in.
Cable weight: 30 lbs.



SUBBOTTOM PROFILING SYSTEM

Manufacturer: EdgeTech

Model: X-Star (heavily modified) **CATALOG** 94

Application:

Subbottom surveying and soil classification.

General Description:

System consists of the following three components:
(1) Stabilized linear wide-band transducer and tow-body. (The "fish" with the PC-in-a-bottle controller installed.)
(2) Calibrated very-wide-band digital FM deep-penetration subbottom sonar processor. (Sun workstation operating Unix.)
(3) Sediment Characterization Penetrometer (SCP) designed to provide mechanical reference datum of sediment properties for the sonar processor. With topside PC.

General Requirements:

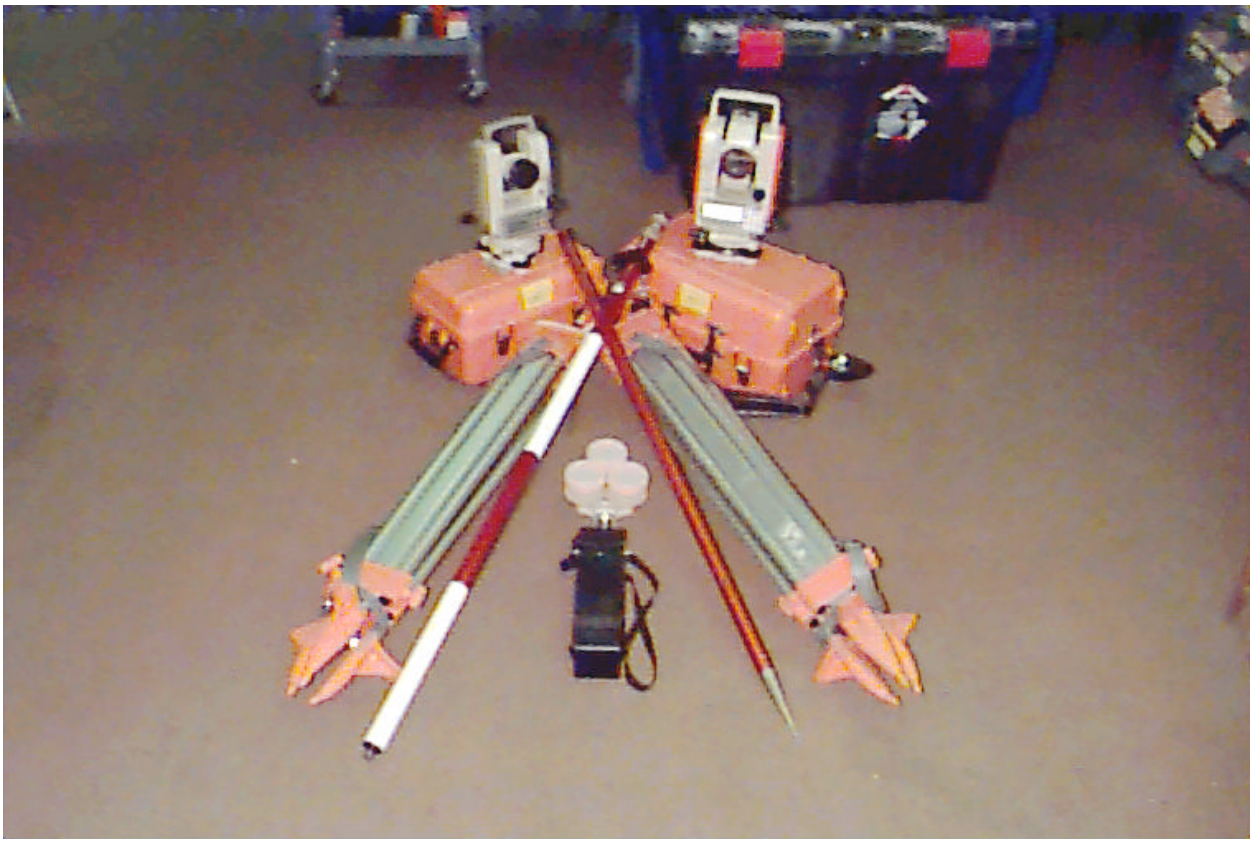
System requires a boat with a winch for launching, towing, and retrieving the fish. The boat must have protected space available for the sonar processor, and a reliable 110 VAC power source.

System operation requires two trained operators, one with extensive subbottom sonar experience. Operators are available, on a reimbursable basis, from the NFESC.

Specifications:

Tow-body/Fish, 1 - 15 kHz Chirp Operating Frequency
Attitude filtered data.
Custom Chirp Pulse (wider, 4-octave, ramped, shaped bandwidth) to improve inversion calculations for sediment impedance and phase shift tracking.
Full system calibration using match filtering technique.
Soil classification using frequency dependent attenuation algorithm.

System is currently in the following primarily wooden shipping containers:
Tow fish & misc: ~5' x 4' x 2.5', ~350 lbs
Topside Sun computer: ~3' x 3' x 3', ~100 lbs
Penetrometer and cables: ~3' x 3' x 3', ~ 75 lbs
Penetrometer tips: ~ 2' x 1.5' x 4', ~90 lbs
Penetrometer PC and Monitor: ~2 x 2.5 x 3', ~40 lbs



SURVEYING KIT

Manufacturer: Pentax

Model: CATALOG 57

Application:

Designed as a land base surveying system.

General Description:

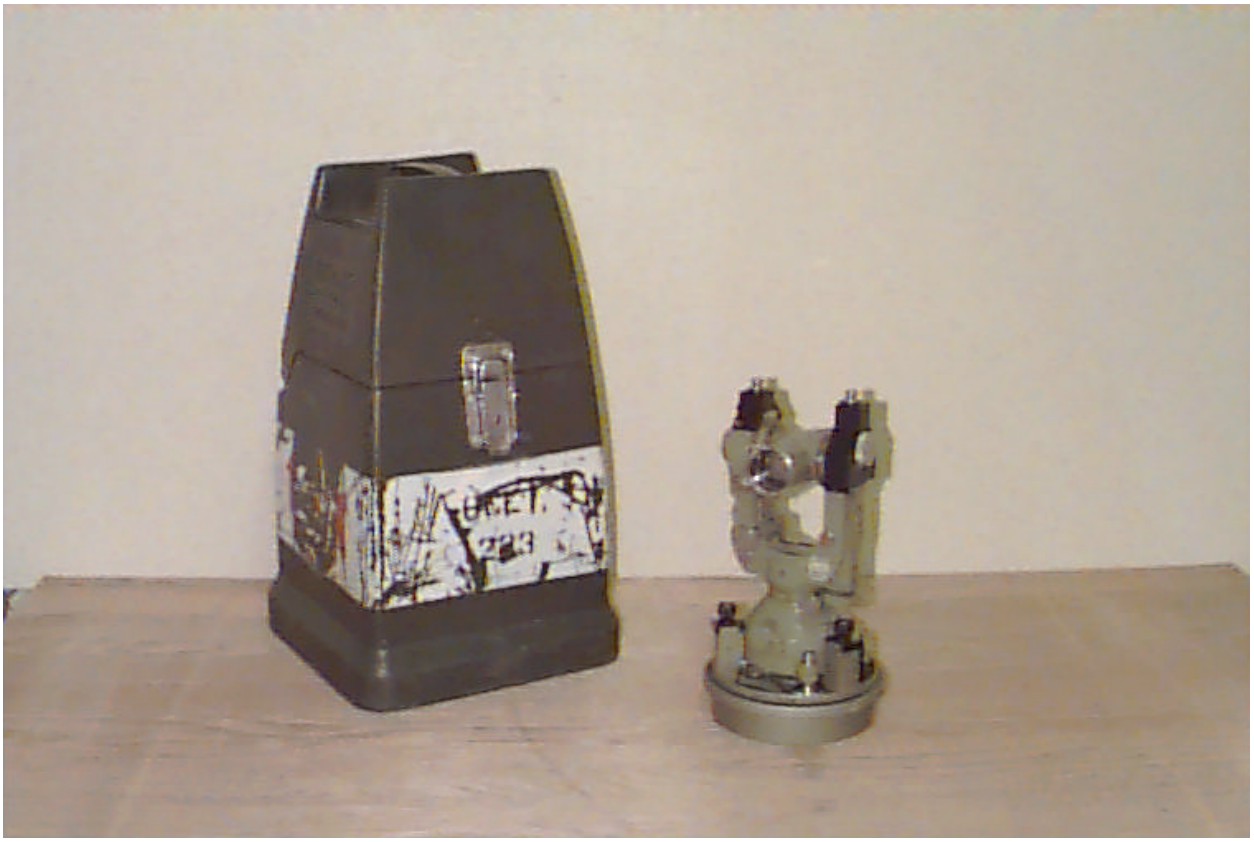
The kit includes two ETH-10D Electronic Theodolites, one MD-20 EDM unit, and one Bushnell Yardage Pro Compact 800 laser range finder as the basic system. The kit also includes tripods, a range pole, battery charger, prisms, and an auto converter to power the system with a 12 volt battery. One kit is available with a PTS-V3 Electronic Total Station, and one ETH-10D Electronic Theodolite. Range Finder distance measureing system,

General Requirements:

SUPPORT: AC power for battery charging.
OPERATOR: Dependant upon user application.
TRAINING: Basic surveying knowledge is required. The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Specifications vary depending on which components are to be used.



THEODOLITE

Manufacturer: Wild Heerbrugg

Model: T2 68DEG **CATALOG** 58

Application:

The theodolite is a survey instrument used for making measurements, calculating horizontal and vertical angles, and for taking astronomical observations.

General Description:

The system consists of a tribrach (base of the instrument), lower part (standing axis and horizontal circle), the alidade (telescope and reading microscope), container and tripod. Specific application is site surveying and site preparation which might include, triangulation, distance measuring, traversing, and surveying observations. It is shipped with the tripod designed to accommodate the unit.

General Requirements:

SUPPORT: The unit is completely self contained.

OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: Basic surveying knowledge is required. The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Overall Diameter: 6 inches
Height: 12 inches
Weight: (Theodolite & Tribrach): 13 lbs.
Weight: (Tripod): 13 lbs.
Packing Case (baseplate and hood): 5 inches.

TIME DOMAIN REFLECTOMETER

Manufacturer: TEKTRONIX

Model: 1503 **CATALOG** 84

Application:

Designed to test cables up to 50,000 feet in length.

General Description:

The TDR is a lightweight, compact, portable test instrument housed in a carrying case. It uses pulse principles to test cables up to 50,000 feet in length, and provides a visual display of cable faults. The unit operates by transmitting and receiving a test pulse through the cable output jack and displaying it on the screen. To the trained operator, the shape of the fault display indicates the type of fault and the displayed time interval from test pulse to fault pulse indicates distance to the fault.

General Requirements:

SUPPORT: The unit will operate on an input power of 117 volts AC 48 to 410 Hz. The unit will also operate approximately 5 hours on internal rechargeable batteries.
OPERATOR: One trained person familiar with the operation of electronic test equipment can operate the unit
TRAINING: Familiarity with electronic test equipment of this type, and a review of the technical manual is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Test Signal:
Duration 10 ns, 100ns, 10OOns .....+ - 20% & 1/2 amplitude
Amplitude 10V +-20% unterminated ..... 5V +-20% terminated
Shape 1/2 sine +-20%
Termination 50 , 75 , or 93 , + - 1% 125, ...+ - 3%
Jitter 0.2 div max @ 5 feet/div
Vertical System:
Deflection Range 6 to -18 dB
Deflection Accuracy + - 3%
Horizontal System:
Distance Dial Range at 1OX 0-2500 feet
Distance Dial Range at 10OX 0-25,000 feet
Accuracy + - 2% of reading + 1 digit
physical Specifications
Depth 16.5 inches.
Width 12.4 inches.
Height 5.0 inches.
Weight 18 lbs.
Spares: No

TRANSPONDER / RELEASE

Manufacturer: AMF SEA LINK

Model: 200 **CATALOG** 59

Application:

The Command and Confirm System is an integrated set of components which are designed to assist in the placement of underwater structures and to position underwater test equipment and permit its recovery.

General Description:

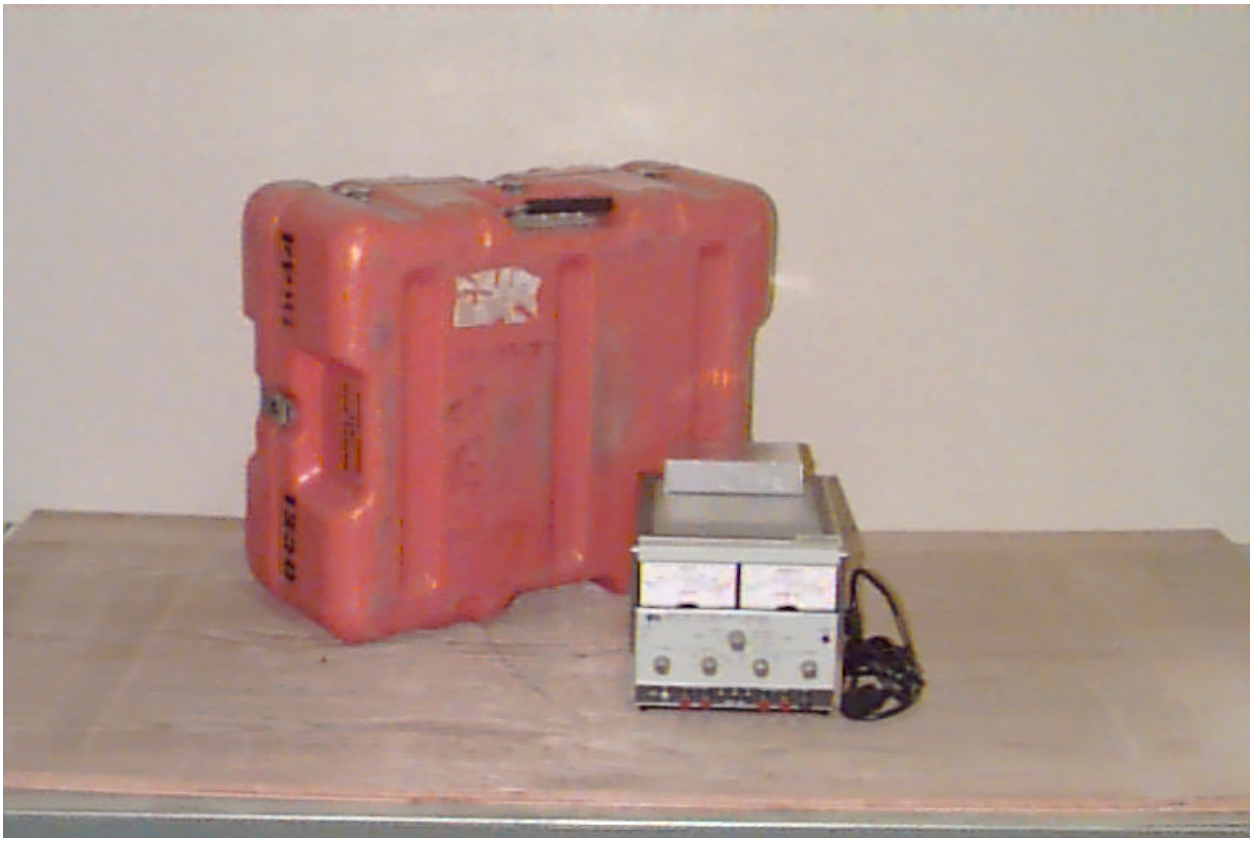
The system operates at 12 kHz and consists of a receiver, an encoder/amplifier, transducer, and an acoustic transponder/release. In operation, the transponder/release is placed on the lowering cable above the payload and once the package is on the seafloor, and encoder amplifier can send a signal to the transponder effecting the release of the structure. When retrieval is required, a float and a second transponder are added to the payload. On command from the encoder amplifier, the transponder will release from the bottom weight allowing the payload to rise to the surface for retrieval.

General Requirements:

SUPPORT: The receiver and encoder amplifier operate on 105 to 125 VAC or 210 to 250 volts AC at 47 to 400 Hz. The two types of batteries required to operate the transponder are only available from the manufacturer. The recommended Alkaline battery will provide 12 months of service while the lithium battery will provide 24 months of service. OCSF does not furnish batteries for this unit.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The acoustic transponder/release operates at a pulse duration of 16 seconds when upright and 32 seconds when tilted providing positive information that the payload is on the seaftoor. The pulse repetition rate changes from 1 pulse per 2 seconds when the payload is attached to 1 pulse per second upon release, providing a positive release has occurred. The transponder is rated for service in water depth up to 20,000 feet with a battery life of up to two years. Maximum payload weight is restricted by the release mechanism to 2,500 pounds. Additional options available include the addition of a strongback to increase the load rating to 10,000 pounds and a paralleling kit to allow for redundant release.
Receiver:
Length 8 inches.
Width 19 inches.
Height 7 inches.
Weight 10 lbs.
Transponder/Release: (without strongback)
Height 44inches.
Diameter 7.5 inches.
Weight 70 lbs.
Encoder Amplifier:
Depth 13 inches.
Width 19 inches.
Height 7 inches.
Weight 35 lbs.



U/W CABLE TRACKER Shore Based Signal Injector

Manufacturer: Western Instruments/Hewlett Packard

Model: 6827A **CATALOG** 5

Application:

The dual frequency (bipolar power supply) shore based signal injector is used to impress a tracking tone on a cable. The tracking probe(catalogue #11) can be used on land or by a diver to track the tone in the cable. The hand held cable tracking probe is designed to detect low level electromagnetic fields at the appropriate frequency. The strength of the received signal is displayed on a light bar or as an audio output for an underwater earphone. The hand held tracking probe is powered by a battery pack and comes with a battery charger and a spare pack.

General Description:

Underwater Cable Tracker shore based signal injector is used on land in conjunction with the tracking probe to: (1) locate and track surface laid and buried cable; (2) estimate the depth of the buried cable; and (3) locate conductor faults in the buried cable. The basic system consists of a shore based signal injector (Bipolar Power

Supply), and a submersible hand-held tracking probe.

General Requirements:

SUPPORT: The shore based signal injector (AKA: Bi Polar Power supply) requires a source 110 VAC power.
OPERATOR: One person is capable of operating and maintaining the equipment. Injecting the tracking tone on an operating or smaller signal cables requires specialized technical assistance from the cable owner.
TRAINING: A knowledge of tracking cables, injecting signals (tones)on cables is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Shore Based Signal Injector: Output Oscillator (#1) 25 Hz; Output Oscillator (#2) 1,024 Hz
Diver Cable Tracking Probe: Design Water Depth: 230 ft
Battery Pack Output Voltage: 9 V dc. Battery Life: 4 hrs. Recharge Time: 15 hrs.
Shipping Container: L24 X W8 X H15 inches. Weight: 45 lbs.
Underwater Signal Injector: internal battery powered, good to 180 ft seawater, operates at 1024HZ.
Underwater Signal Injector coil: 10.5 inches in diameter X 5.5 inches long, 24 lbs. in air, 18 lbs. In underwater.

Cable Tracking Probe

OCEI Catalog # 11 Manufacturer: Western Instruments

Model:

ULTRASONIC THICKNESS METER

Manufacturer: Krautkramer Branson

Model: DM2 LCD **CATALOG** 78

Application:

Measures the thickness of a variety of materials including pipe, pressure vessels, and other products whose thickness may have been affected by corrosion or erosion. Can be used underwater. Underwater transducer is attached via a 50-foot cable to the meter at the surface.

General Description:

The ultrasonic thickness meter is a portable, pocket sized, ultrasonic testing instrument which consists of a transducer, interconnecting cable and a meter. After setting the proper acoustic velocity (from the manual), the meter transmits a signal through the transducer to the test material. When the signal reaches any material which is substantially different from the material under test, the signal is returned to the transducer. Half the round trip travel time for the signal can then be computed into the material thickness. The meter has a velocity and a zero control knob to set the proper

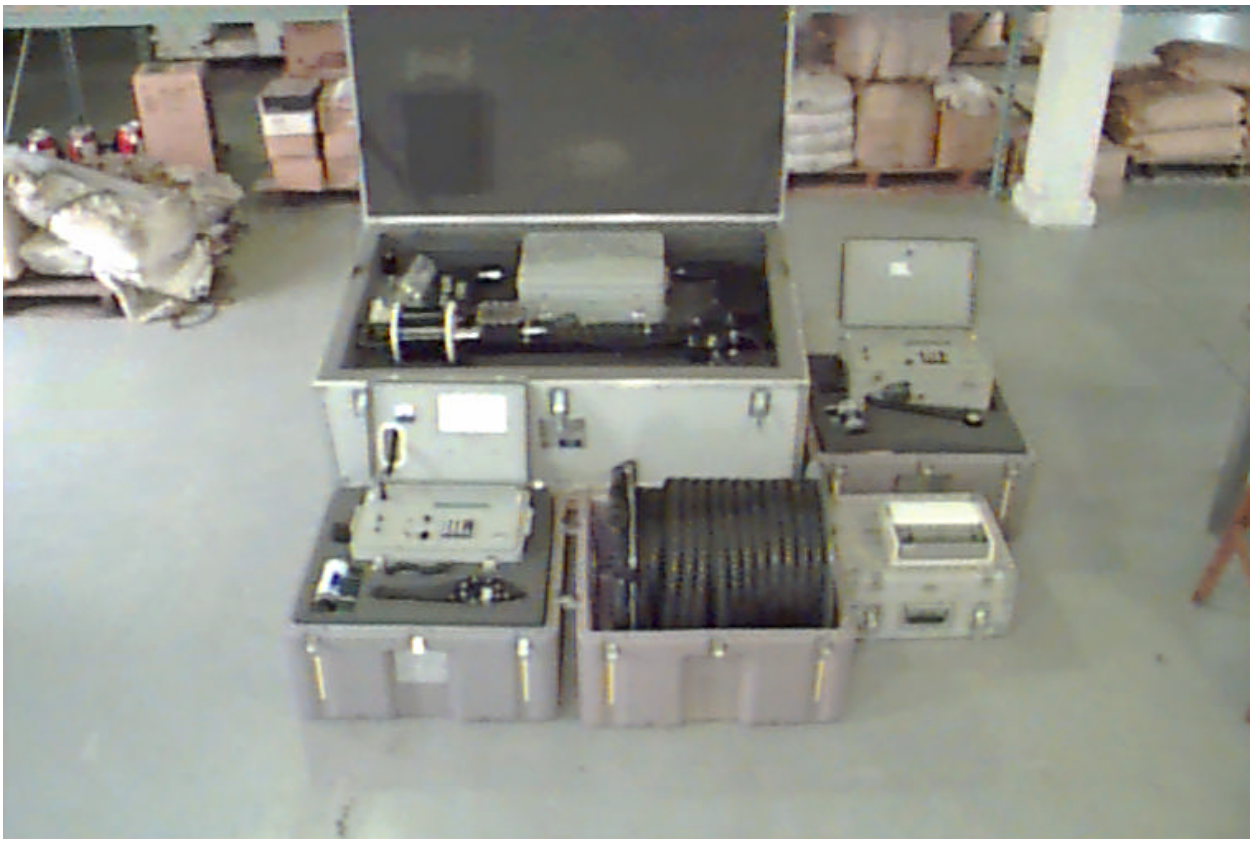
values for the material being tested.

General Requirements:

SUPPORT: 115 volt AC power is required for battery charging.
OPERATOR: One trained operator is required to setup and monitor the readings of the meter.
TRAINING: Training in the operation of the instrument, with emphasis on detecting the size of various types of materials.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Range: 0 to 9.999 in., depending on material
Accuracy: +/- 0.001 in.
Maximum water depth: 650 ft.
Operating time (normal): 12 hrs.
Operating time (continuous): 8 hrs.
Size: 1.5 in X 2.75 in. X 6 in.
Weight: 14 oz. (meter only)
Shipping weight: 12.5 lbs.



UNDERWATER CONCRETE INSPECTION SYSTEM

Manufacturer: Naval Civil Engineering Laboratory

Model: 2613DL **CATALOG** 61

Application:

The Underwater Concrete Inspection System produces information about an underwater concrete structure based on ultrasonic sound velocity information.

General Description:

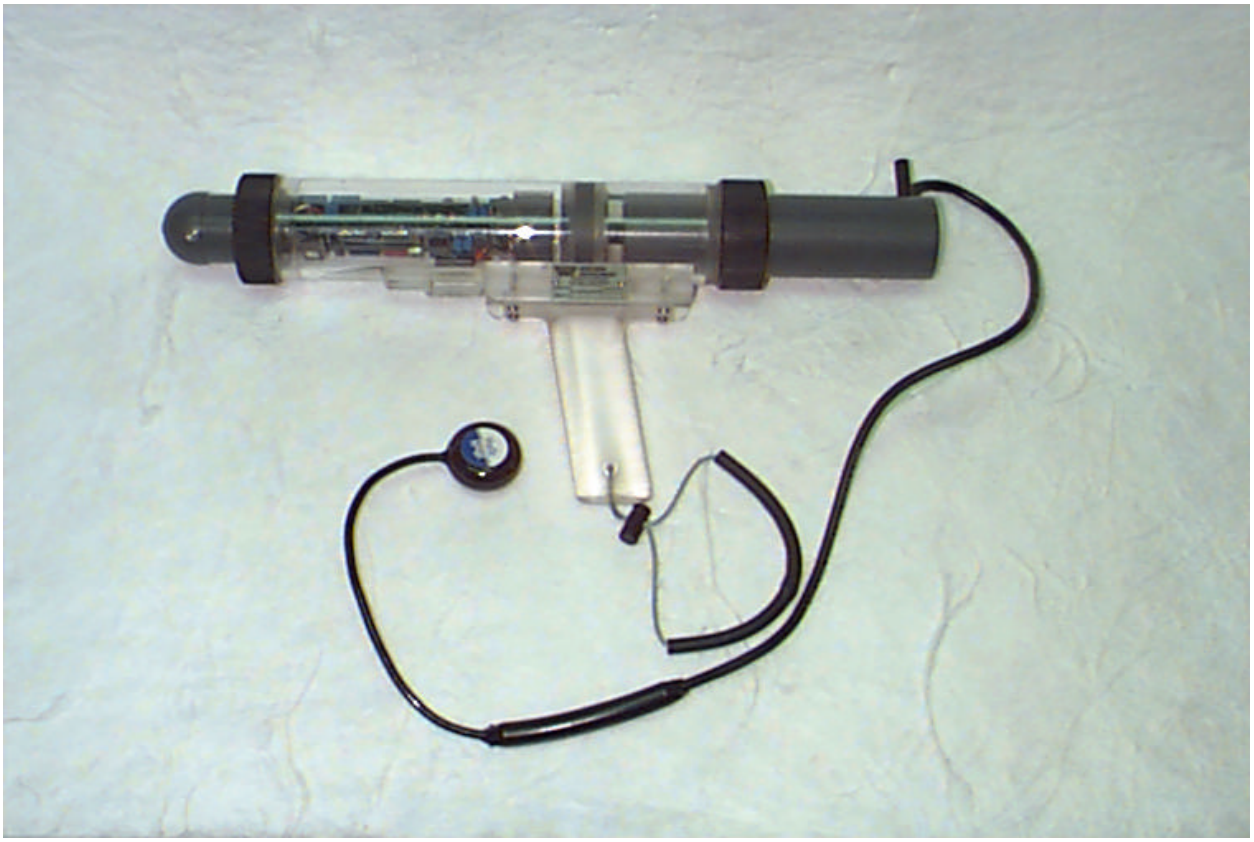
Ultrasonic sound velocity information is generated when the diver places the face of the transducers on the surface of the structure being tested. Ths information is correlated with the internal condition of the concrete and a general condition assessment rating is provided. The transducer holder consists of a mechanical framework, a transmit probe, a receive probe, and a waterproof case thtat contains a digital display and other electronic components. Attached to the tranducer holder is an electrical cable that is also attached topside to the data acquisition unit (DAU). The DAU is used to supply power to and process signlas from the transducers.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic knowledge of mechanical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Performance Specifications:
Operational Depth 190 feet.
Operating temperature range (in water) 28 to 95 degrees Fahrenheit
Physical Specifications
System shipped in five shipping containers:
Weight 622 lbs.
Direct Transducer Holder
Weight (in air) 29 lbs.
Weight (in water) I lb.
Indirect Transducer Holder
Weight (in air) 12 lbs.
Weight (in water) 3 lbs.
Electrical Cable
Length 200 feet.
Weight (in air) 80 lbs.
Weight (in water) 9 lbs. positive buoyancy
Cable Reel
Weight (empty) 65 lbs.
Weight (w/cable) 145 lbs.
Data Acquisition Unit
Length 18 inches
Width 12 inches
Height 12 inches
Weight 47 lbs.
Rebound Hammer
Weight (in air) 12lbs.
Weight (in water) 5 lbs.
Rebar Locator
Weight (in air) 7 lbs.
Weight (in water) 3.5 lbs.



UNDERWATER ELECTRIC FIELD DETECTOR

Manufacturer: Naval Civil Engineering Laboratory (NCEL)

Model: M11833701A01 **CATALOG** 62

Application:

Designed to detect the presence of low and high potential electric fields which may potentially be harmful to divers. Used to survey underwater electrical equipment before and during diving operations.

General Description:

The Underwater Electric Field Detector (UEFD) is a handheld, pistol shaped, diver operated electrical field detector which emits an audible tone and/or visual signal when an electrical field is encountered. The field detector is calibrated for use in seawater only. Kit includes: handheld detector, two battery packs, battery charger, earphones, and carrying case.

General Requirements:

SUPPORT: 120 volts AC power is required for battery charging.
TRAINING: The operation and maintenance manual contains the necessary information for proper operation and maintenance of this equipment. The operator should have a knowledge of electrical fields in seawater.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

CARRY CASE: L21 X W8 X H18 inches.
WEIGHT: 18 lbs.
UNIT: L19 X D3 inches
WEIGHT: (air): 5.1lbs.
WEIGHT: (water): 0.5 lbs.
BATTERY PACK CAPACITY: 600 milliamperes/hour = approximately 18 hours
VOLTAGE: 8.5 to 12.5 V DC
OPERATING CURRENT: 40 milliamperes
OPERATING DEPTH: 150 ft.
ACCURACY: 5%
OPERATING TEMP. RANGE. +28 to 95 degrees F, -2 to +35 degrees C.
STORAGE TEMP. RANGE: -4 to 122 degrees F, -20 to +50 degrees C.
STORAGE HUMIDITY: up to 90%
LOW FIELD: preset 0.1 volt per foot
HIGH FIELD: preset 0.2 volt per foot

UNDERWATER THICKNESS METER

Manufacturer: Krautkramer Branson

Model: DMU **CATALOG** 82

Application:

The battery powered unit is designed for ease of use underwater and the instrument is positioned to be easily read by the diver. The test is initiated by pushing the meter probe against the test piece. Thickness of the tested material is read directly on the LED readout. Functional checks for coupling,, battery, and overflow (thickness above 99.9 mm) are also on the LED readout.

General Description:

The underwater thickness meter is a battery operated ultrasonic testing instrument in a watertight case for underwater operation. The meter, battery charger, handle lanyard, 5 mm steel test block and charger lead are all shipped in a protective carrying case.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A knowledge of electrical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Range: Factory Preset to 4-100 mm in steel
Accuracy: +-0.2mm
Maximum water depth: 650 feet
Operating Time: (Normal) 8 hours
Operating Time: (Continuous) 4 hours
L18 XW15 XH5 inches
Weight: 26 lbs.

WINCH, CEL

Manufacturer: NCEL

Model: **CATALOG** 65

Application:

Designed to deploy and recover underwater equipment. The large core diameter of the drum, as well as the capacity make this winch versatile and adaptable to many applications.

General Description:

A diesel driven hydraulic power unit provides hydraulic power to drive a single drum winch. The winch has two speed capability, selectable at the control console. Low speed provides 39,500 lbs. haul in at 70 fpm, while high speed will provide 19,500 lbs. pull at 140 fpm. A level wind system allows the winch to accommodate cable sizes from 7/8 inch to 2 inch. The winch is electrically controlled from a walk-around control console. A slip ring assembly is available for cable monitoring during deployment and recovery.

General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operations and applications is required. Qualified operators can be provided by the OCSF.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Winch:
L 129 X W 129 H X 96 INCHES.
WT. 31,000 lbs.
Cable Drum Dimensions:
A= flange to core: 18 inches
B= core diameter: 48 inches
C= flange to flange : 73 inches
Wire rope capacity:
1 inch: 22,700 feet
7/8 inch: 29,600 feet
3/4 inch: 40,000 feet
5/8 inch: 58,000 feet
1/2 inch: 91,000 feet
Hydraulic power unit:
L 86 W 36 H66 Inches
Wt. 5200 lbs.

WINCH, DIESEL HYDRAULIC 20K

Manufacturer: DEY MFG CO

Model: W-20-K **CATALOG** 66

Application:

Designed to be used as a portable mooring winch, but most widely used as a general purpose winch for shore and shipboard applications.

General Description:

The single drum winch is a self-contained skid-mounted unit. The winch drum incorporates a level wind mechanism and has a gypsy winch mounted on the outboard side. It is powered by a General Motors Detroit Diesel 4-53 series engine coupled to a Sunstrand fluid transmission. A control console is mounted between the winch and the engine which includes all controls for the operation and monitoring of the winch.

General Requirements:

OPERATOR: One person is capable of operating and maintaining the equipment.

TRAINING: A thorough knowledge of mechanical equipment operations and applications is required. Qualified operators can be provided by the OCSF.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The winch is capable of a variety of cable speeds to a maximum of 150 fpm in both directions of travel. Line tension is rated at a maximum of 20,000 pounds.
L 125 X W 86 X H 69 inches. Weight: 12,000 lbs.
Cable Drum Dimensions:
A= flange to core: 8 inches
B= core diameter: 20 inches
C= flange to flange : 27 inches
Wire rope capacity:
1 inch: 1585 feet
7/8 inch: 2000 feet
3/4 inch: 2800 feet
5/8 inch: 4050 feet
1/2 inch: 6350 feet
3/8 inch: 11,000 feet

WINCH, DIESEL HYDRAULIC, SWM

Manufacturer: Hydraulic Power Systems

Model: M12-3-97-1 **CATALOG** 67

Application:

Primarily used in mooring systems. The winch is versatile and adaptable to a wide variety of applications.

General Description:

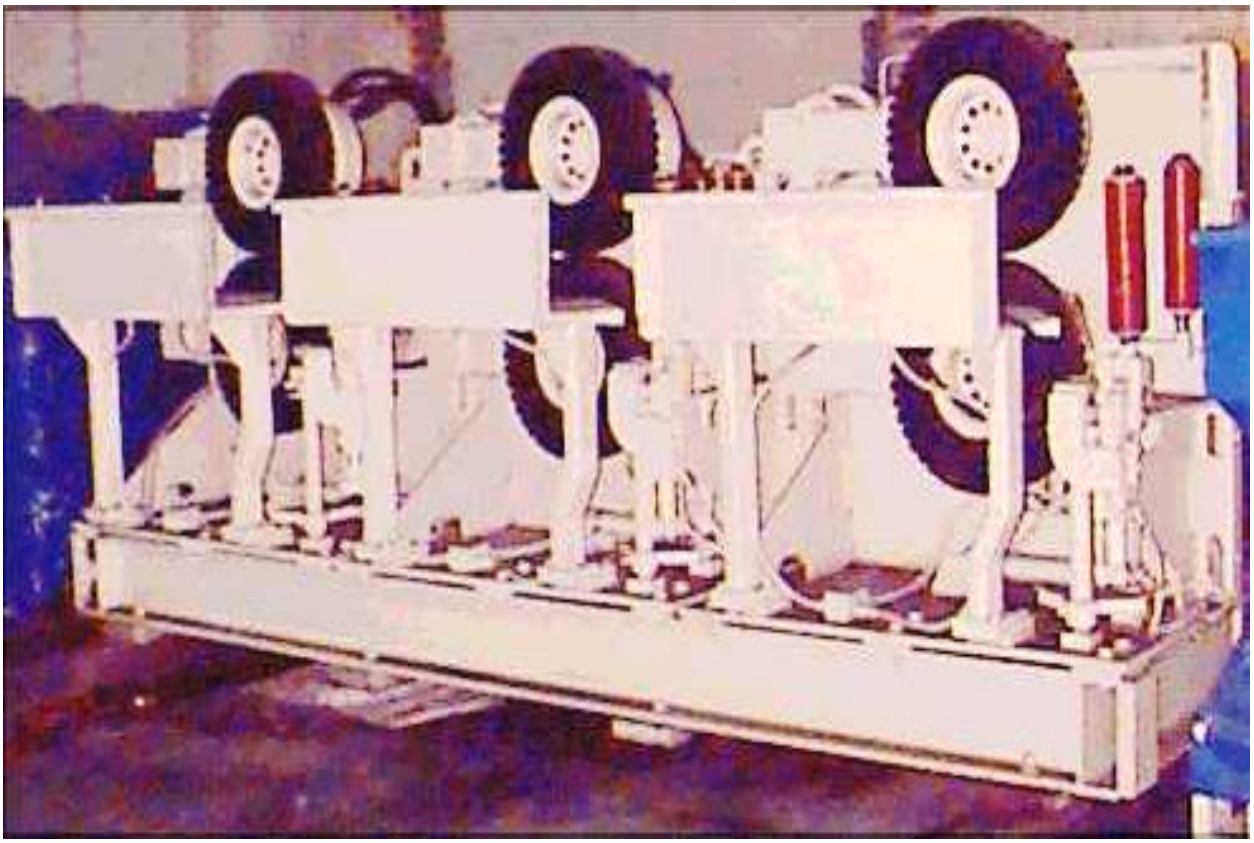
The diesel hydraulic winch consists of a hydraulic power unit, with controls for operation of a drum winch, and an interchangeable gypsy winch. Each unit is skid mounted for ease of movement. The gypsy winch is equipped with a 25 foot section of hydraulic hose with standard fittings. The drum winch is normally mounted to the hydraulic power unit. Both the drum and gypsy winch can be remotely mounted and controlled at the hydraulic power unit.

General Requirements:

SUPPORT: The unit is completely self contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The system is shipped with the drum winch installed on the hydraulic power unit. The gypsy head is shipped as a separate unit.
Hydraulic Power Unit:
Pump output, Section 1, 18 GPM at 2200 PSI
Pump output, Section 2, 9 GPM at 2200 PSI
Maximum Operating Pressure: 2200 PSI
Reservoir Capacity: 50 gallons
Dimensions:
L60 XW42 XH66 inches
Weight: 2,850 lbs.
Gypsy Winch:
 Rated at 5,200 lbs. pull at stall
Length: 24 inches.
Width: 42 inches.
Height: 32 inches.
Weight: 400 lbs.
Drum winch:
12,000 lbs. Bare drum pull at stall
Length: 24 inches.
Width: 42 inches.
Height : 24 inches.
Weight: 650 lbs.
Cable Drum Dimensions:
A= flange to core: 3.5 inches
B= core diameter: 7 inches
C= flange to flange : 10 inches
Wire rope capacity:
5/8 inch: 200 feet
9/16 inch: 280 feet
1/2 inch: 380 feet
7/16 inch: 450 feet
3/8 inch: 680 feet
1/4 inch: 1500 feet



WINCH, LINEAR CABLE

Manufacturer: TSE INTERNATIONAL, INC./PENGO

Model: LTD-3-60EH **CATALOG** 69

Application:

The LCE was designed to deploy or recover Electro / Mechanical and Fiber Optic cables, ranging from 1/2 to 5 inches in diameter.

General Description:

The Linear Traction Drive is a three pair wheel self-contained unit, complete with a control console. The linear traction drive includes chutes and vertical guides to direct the cable through the machine. The wheels and guides automatically open to allow the passage of in-line cylindrical bodies attached to the cable up to a diameter of 14 inches. Each pair of wheels is capable of being opened independently by the machine operator from the control console. The outer guides are hinged to allow access to the cable for removal when the machine is stopped. The linear traction drive is electro-hydraulically powered and adaptable for use on board a vessel or ashore in an ocean construction activity. All controls and indicating instruments as well as the drive motor,

are integral with the equipment. The system comes with three modules, one master and two slaves, that can be put together as needed.

General Requirements:

SUPPORT: Requires 440 volt, 3 phase electrical power.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operations and applications is required. Qualified operators can be provided by the OCSF.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Three wheel pairs operate under continuous controlled tensions from 0 to 6,000 pounds line pull at tensioning speeds of up to 400 feet per minute (4 knots) and pick-up speeds of up to 200 feet per minute (2 knots). The linear traction drive includes chutes and vertical guides to direct the cable through the machine.

Generator, diesel 440v 150 kw

OCEI Catalog # 25 Manufacturer: Western Branch Die

Model: 16165

150 kW 260/450 VAC 3 Phase 60 Hz. Provided with a 300 amp control panel and 300 amp trip circuit breaker.

WINCH, LINEAR CAPSTAN

Manufacturer: National Standard / Bartel Div.

Model: **CATALOG** 70

Application:

Designed to transport cable from reels to tanks, or tank to tank, or reel to reel. The unit may be used in one of two modes of operation. In the torque mode cable will begin to slip once the preset torque is reached. In the speed mode, once the correct speed has been set, the unit will continue to operate at that rate. Speed mode is always used when turning cable into tanks since caterpillar track speed determines the turning rate.

General Description:

The Linear Capstan is a belt driven horizontal electrical cable handling unit. Air pressure is used to load and apply pressure to the cable as it passes between the tracks. The unit is particularly effective when even tension is required to transport cable. The caterpillar tracks are powered by an electric 10 hp eddy current clutched motor through a four speed gearbox. All speed and directional controls are situated on one side of the unit and include a lever to open and close the tread, a regulator lever

which controls the air pressure to the tread cylinders and a lever to select gear ratio desired. Controls to select speed or torque operation, as well as air pressure, are located on top of the unit with the cable speed gauges.

General Requirements:

SUPPORT: Requires 440 volt, 3 phase, 60 cycle electrical power.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operations and applications is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

Air compressor included.

Gear Ratio	Line Speed	
1/1	226	
1.82/1	124	
3.039/1	75	
4.012/1	56	2500 lbs. pull at 56 fpm

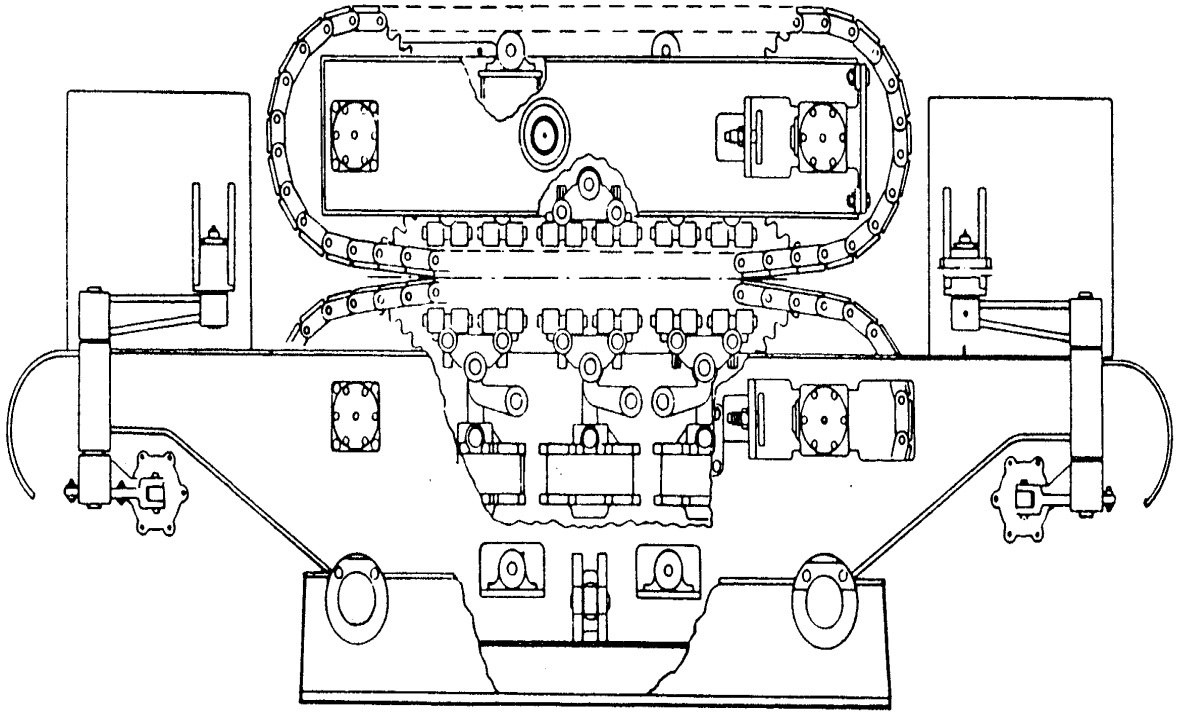
48 inch caterpillar track
L84 XW48 XH84 inches.
WEIGHT: 5,160

GENERATOR, DIESEL 440V 37.5KW

OCEI Catalog # 24 Manufacturer: Detroit Diesel Electri

Model: DDC 40

440 volts A/C
Three phase, sixty cycle
46.3 kVA
37.5 kW
58.8 amps
Lug hookup
L83 XW34 XH76 inches
Weight: 2000 lbs. cube 124



WINCH, LINEAR TRACTION DOHB

Manufacturer: Western Gear

Model: DOHB **CATALOG** 71

Application:

The DOHB machine is a Linear cable engine designed for laying and retrieving long lengths of cable, especially coaxial cables with inline repeaters whose diameter is 6.5 inches or less.

General Description:

The DOHB consists of the tension machine, power unit, and control console. The machine is powered by an electrohydraulic power unit requiring an external power source. Air for operation of the pneumatic controls and track squeeze is supplied through the control console from an auxiliary air supply. The machine is capable of controlling cable tension to a cable winding drum, or cable tank as it is paid out or hauled in. Controlled tension is achieved through a variable displacement inline piston pump which delivers 45 gpm hydraulic flow to the tension machine drive motors.

General Requirements:

SUPPORT: Requires 440 volt, 3 phase, 60 cycle electrical power and compressed air.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The machine is capable of delivering 2,250 pounds of tension at a cable speed of 315 fpm. During high speed operation, tension is reduced to 1,125 pounds with a cable speed of 670 fpm. With a Line speed of 0 to 3 knots, the unit will pull cable at a tension of 0 to 2,000 lbs.
DOHB
Length 128 inches.
Width 76 inches.
Height (w/track up) 65 inches.
Height (w/track down) 53 inches.
Weight 8,500 lbs.
DOHB power unit:
Length 60 inches.
Width 45 inches
Height 48 inches.
Weight 3,500 lbs.
Control console
Shipped as 4 pieces @ machine, hydraulic. unit, console, & hookup material.

GENERATOR, DIESEL 440V 37.5KW

OCEI Catalog # 24 Manufacturer: Detroit Diesel Electri

Model: DDC 40

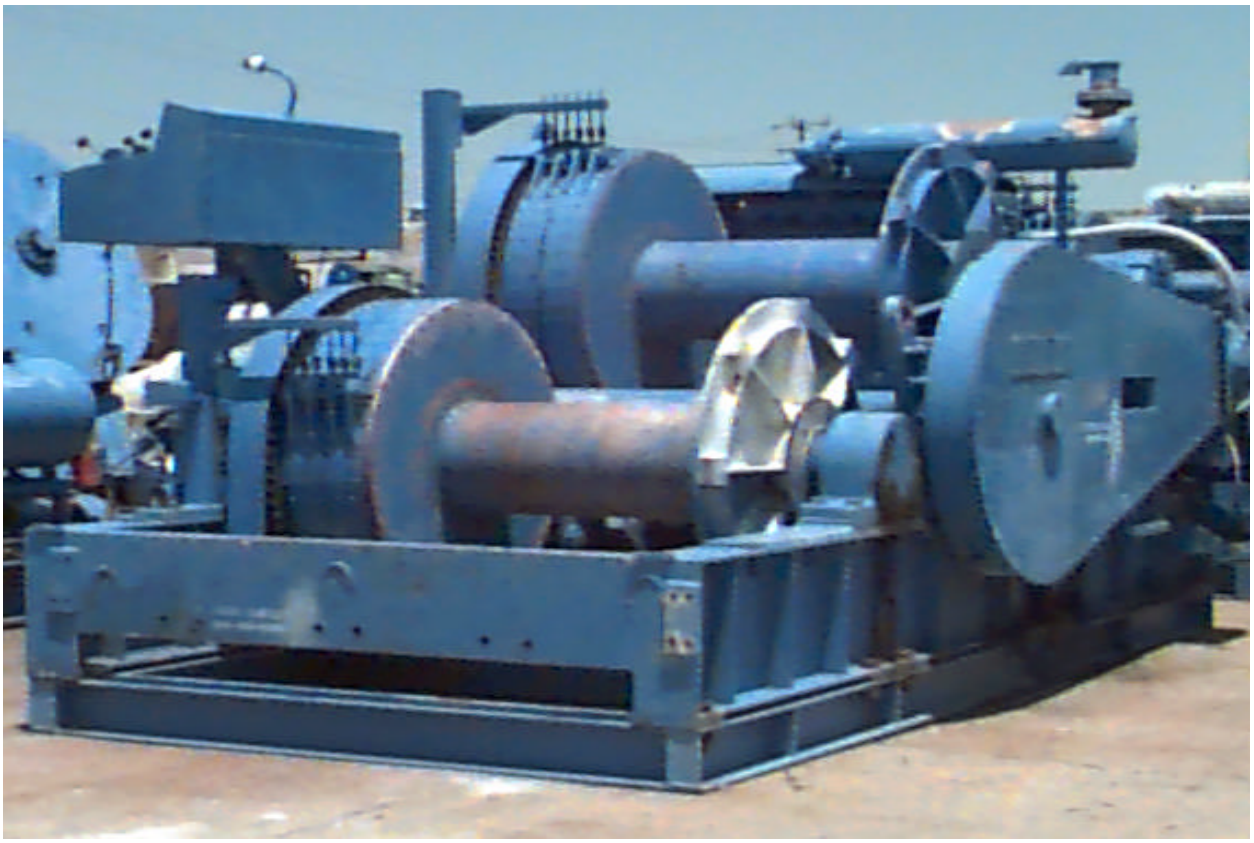
440 volts A/C
Three phase, sixty cycle
46.3 kVA
37.5 kW
58.8 amps
Lug hookup
L83 XW34 XH76 inches
Weight: 2000 lbs. cube 124

AIR COMPRESSOR 375 cfm

OCEI Catalog # 1 Manufacturer: Sullair Corp.

Model: 375DTQ 2WJD

Delivers up to 375 cfm at 100 psi.



WINCH, McELROY 150 K

Manufacturer: Mcelroy Machine

Model: DW50-170D **CATALOG** 74

Application:

Designed as a general purpose winch for shore and shipboard applications.

General Description:

The winch is a double drum, waterfall type, general purpose winch. Power for all winch operations is provided by a diesel engine.

General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operations and applications is required. Qualified operators can be provided by the OCSF.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or

operator's manual.

Specifications:

The rated load is 150,000 lbs. line pull at stall when applied to the first layer of cable on the drum. Each brake will hold 150,000 lbs. for a total of 300,000 lbs. static holding capacity. Each dog will also hold 150,000 lbs. The winch will provide 90,000 lbs. pull with a line speed of 40 fpm.
Dimensions:
L205 XW120 XH112 inches.
Weight: 40,000 lbs.
Cable Drum Dimensions:
A= flange to core: 16.5 inches
B= core diameter: 18 inches
C= flange to flange : 47 inches
Wire rope capacity:
1 1/2 inch: 2300 feet
1 3/8 inch: 3400 feet
1 1/4 inch: 4100 feet
1 1/8 inch: 5100 feet
1 inch: 6500 feet
7/8 inch: 11,600 feet
5/8 inch: 26,000 feet

WINCH, MCELROY 30 K

Manufacturer: McElroy Machine

Model: DU34-100D **CATALOG** 73

Application:

Designed as a general purpose winch for shore and shipboard applications.

General Description:

The winch is a double drum, waterfall type, general purpose winch. Power for all winch operations is provided by a diesel engine. A variable ratio gear driven level wind is incorporated to accommodate wire sizes from 1/2 inch to 1 inch.

General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operations and applications is required. Qualified operators can be provided by the OCSF.

FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

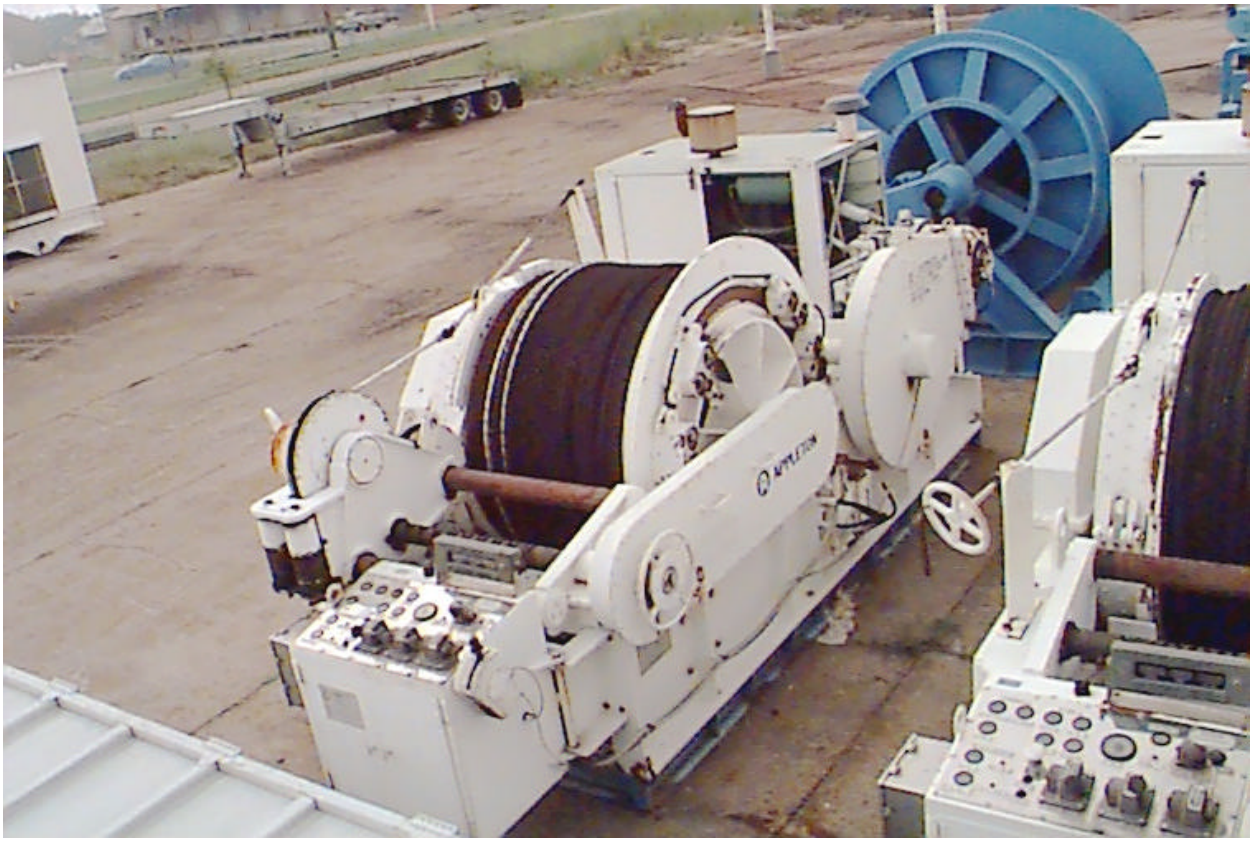
The rated load for the winch is 30,000 lbs. line pull at stall when applied to the first layer of cable on the drum. Each brake will hold 30,000 lbs. for a total of 60,000 lbs. static holding capacity. Each dog will also hold 30,000 lbs. The winch will provide 20,000 lbs. line pull at a line speed of 100 fpm.

Dimensions:
L169 X W102 XH98 inches.
WT. 21,000 lbs.

Operating Dimensions:
L199 X W111 X H 98 inches.

Cable Drum Dimensions:
A= flange to core: 10 inches
B= core diameter: 14 inches
C= flange to flange : 25 inches

Wire rope capacity:
1 inch: 1400 feet
7/8 inch: 1800 feet
3/4 inch: 2500 feet
5/8 inch: 3700 feet
1/2 inch: 5800 feet



WINCH, MOORING 50 K

Manufacturer: Appleton Marine

Model: CATALOG 72

Application:

Primarily used as a portable mooring winch. The drum is designed to be fitted with any one of four wire rope sizes.

General Description:

The winch is powered by a diesel engine through a torque converter and reversing transmission. A type "B" output housing is attached to the transmission allowing the power to flow through a roller chain reduction stage to an intermediate cross shaft. This shaft has an air engaged clutch included on it with its output member attached to a gear pinion. This pinion engages an idler gear which in turn drives the final gear attached to the drum and shaft. The braking system includes a spring set-air operated service brake, a hand operated emergency brake, and a ratchet and dog arrangement which provides spring loading and air release of the dog.
In addition to the above, a level wind device is included in front of the tension

measuring device to properly spool the cable on the drum when used with a separately supplied lead sheave mounted at least twenty feet in front of the level wind and directly in line with the drum centerline. A system is included in the level wind sheave to allow measurement of line tension, line speed, and line footage off the drum.
The diesel engine package includes a fuel tank large enough for at least eight hours of operation, an air compressor and tank for supply of air to all associated controls, a cooling system for both engine and torque converter, and a 24 volt electrical system for miscellaneous controls and starting of the diesel engine.
A single gypsy head is mounted on the intermediate shaft for handling miscellaneous hawsers. A control console is provided for control of most engine and winch functions. It is located forward of the level wind system and mounted to the winch frame by means of a hinge pin. This allows for an operating position clear of the line lead, and also a nested stowing position for shipping purposes. When looking at the winch with the diesel engine between the drum and viewer, the right hand winch has the control console on the right side and the gypsy head on the left side. The left hand winch has the console on the left side and the gypsy head on the right side.

General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A thorough knowledge of mechanical equipment operations and applications is required. Qualified operators can be provided by the OCSF.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

The winch is rated to produce 50,000 pounds of line pull at the first layer of 1-1/4 inch diameter wire rope during torque converter stall conditions. Typical first layer values are as follows:
40,000 pounds - 16 fpm
30,000 pounds - 40 fpm
25,000 pounds - 57 fpm
20,000 pounds - 75 fpm
15,000 pounds - 100 fpm
The 15 inch diameter gypsy head will produce a stall line pull of 10,500 pounds when used with a 5 inch circumference hawser.
Cable Drum Dimensions:
A= flange to core: 22 inches
B= core diameter: 18 inches
C= flange to flange : 38 inches
Wire rope capacity:
1 1/4 inch: 5500 feet
1 1/8 inch: 6650 feet
1 inch: 8400 feet
7/8 inch: 11,000 feet

WINCH, P20 2K

Manufacturer: PENGO

Model: SKCP 20 **CATALOG** 75

Application:

The winch is designed as a puller/tensioner and has a wide range of speed and tension combinations available. At 4 mph, the line tension can be adjusted from 0 to 2,000 pounds conversely, at 2,000 pounds pull the line speed can be adjusted from 0 to 4 mph.
The unit can be operated at a higher speed but at a reduced line pull.

General Description:

The winch is a self-contained, base mounted puller tensioner powered by an air cooled diesel engine. The hydrostatic reel drive system is pressure compensated which allows the operator to pre-set a maximum line tension when the unit is operated as a puller or maintain any degree of sag when it is used as a tensioner. A hydraulically operated levelwind mechanism operated from the main control console is used to control cable layering during winding operations.

General Requirements:

SUPPORT: The unit is completely self-contained.
OPERATOR: One person is capable of operating and maintaining the equipment.
TRAINING: A basic mechanical background in equipment operation and maintenance is required.
FIELD MAINTENANCE: Preventive maintenance is required IAW instructions and/or operator's manual.

Specifications:

L135 XW84 XH93 inches.
Weight 5650 Lbs.
Cable Drum Dimensions:
A= flange to core: 22 inches
B= core diameter: 20 inches
C= flange to flange : 39 inches
Wire rope capacity:
1 inch: 9,000 feet
7/8 inch: 12,000 feet
3/4 inch: 16,000 feet
5/8 inch: 24,000 feet
9/16 inch: 29,000 feet
1/2 inch: 37,000 feet
7/16 inch: 49,000 feet
3/8 inch: 67,000 feet
1/4 inch: 150,000 feet

WINCH, TRACTION 126

Manufacturer: Pengo

Model: SKVRWP-T-20-72 **CATALOG** 76

Application:

Designed to lay or pickup coated cable or soft line up to 2 inches in diameter. Deploys cable from storage reels or cable pans. Picks up and loads storage or working reels.

General Description:

The winch is a self-contained, skid mounted puller tensioner, designed for fast, economical and safe positive control over the line being pulled or tensioned. The unit has two 73 inch, bullwheels which permit 270 degrees cable contact on each of the rubber coated wheels. An integrated self loading cable reel cradle provides cable back tension to the bullwheels. The winch is designed to store cable on either the standard 96 inch or the optional 126 inch Pengo Reel. A Detroit Allison V-671 238 hp. diesel engine supplies all power requirements including electric and hydraulic power for the winch. All operator controls are located in a console on the forward end of the unit. During operation, the bull wheel high tension and cable reel low tension may be preset

by the operator to any level up to the equipment rating. A hydraulically operated levelwind system tilts the bullwheels to level the cable loading on the reel.

General Requirements:

SUPPORT: Mechanical handling equipment is required to load and position the reels on the winch. A six foot to eight foot clear area to the rear of the machine is required for operation of the self loading cable reel mechanism. When loading or unloading full reels of cable, the assistance of a crane will be required.
OPERATOR: One trained experienced operator is required to operate and monitor the functions of the winch. Additional personnel may be required based on the mission requirements. Qualified operators can be provided by the OCSF.
TRAINING: Only qualified operators are permitted to operate this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instruction and/or operator's manual.

Specifications:

The winch is capable of providing both Line pull and controlled line tension up to 20,000 lbs. at a cable speed of 150 fpm.

Cable Capacity:
Standard Reel 96 inch X 36 inch core
3/4 inch cable 56,000 feet
1inch cable 31,000 feet
1 1/2inch cable 13,500 feet
2inch cable 7,500 feet

Cable Capacity:
Optional Reel 126 inch X 36 inch core
3/4 inch cable 80,700 feet
1inch cable 45,400 feet
1 1/2inch cable 20,100 feet
2inch cable 11,400 feet

Maximum weight Limit for the cable reel cradle is 40,000 lbs.

Winch: L317 XW99 XH136 inches with 126 inch reel.
WEIGHT40,000 lbs.

Cable Reel:
Diameter 96 inch and 126 inch
Width 64 inches.
Distance between flanges 51 inches.
Core Diameter 36 inches.
Spindle Diameter 5 inches.

Maximum Loaded weight 40,000 lbs.

WINCH, TRACTION 96

Manufacturer: Pengo

Model: SER600 M200 **CATALOG** 77

Application:

Designed to lay or pickup coated cable or soft line up to 2 inches in diameter. Deploys cable from storage reels or cable pans. Picks up and loads storage or working reels.

General Description:

The winch is a self contained, skid mounted , puller tensioner, designed for fast, economical and safe positive control over the line being pulled or tensioned. The unit has two 73 inch, bullwheels which permit 270 degrees cable contact on each of the rubber coated wheels. An integrated self -Loading cable reel cradle provides cable back tension to the bullwheels. The winch is designed to store cable on the standard 96 inch Pengo Reel. A Detroit Allison V-671 238 hp. diesel engine supplies all power requirements including electric and hydraulic power for the winch. All operator controls are located in a console on the forward end of the unit. During operation, the bull wheel high tension and cable reel low tension may be preset by the operator to any

level up to the equipment rating. A hydraulically operated levelwind system tilts the bullwheels to level the cable loading on the reel.

General Requirements:

SUPPORT: Suitable mechanical handling equipment is required for off loading, loading and positioning of the winch and to load and position the reels for loading. A six foot to eight foot clear area to the rear of the machine is required for operation of the self loading cable reel mechanism. When loading or unloading full reels of cable, the assistance of a crane will be required.
OPERATOR: One trained experienced operator is required to operate and monitor the functions of the winch. Additional personnel may be required based on the mission requirements. Qualified operators can be provided by the OCSF.
TRAINING: Only qualified operators are permitted to operate this equipment.
FIELD MAINTENANCE: Preventive maintenance is required IAW instruction and/or operator's manual.

Specifications:

The winch is capable of providing both line pull and controlled line tension up to 20,000 lbs. at a cable speed of 150 fpm.

Cable Capacity:
Standard Reel 96 inch X 36 inch core
3/4 inch cable 56,000 feet
1inch cable 31,000 feet
1 1/2inch cable 13,500 feet
2inch cable 7,500 feet

Maximum weight Limit for the cable reel cradle is 30,000 lbs.

Winch: L222 XW96 XH122 inches with reel.
WEIGHT33,000 lbs.

Cable Reel:
Diameter 96 inch
Width 64 inches.
Distance between flanges 51 inches.
Core Diameter 36 inches.
Spindle Diameter 5 inches.

Maximum Loaded weight 30,000 lbs.